

For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex LIBRIS
UNIVERSITATIS
ALBERTAENSIS



THE UNIVERSITY OF ALBERTA

VIDEOTAPE SELF-CONFRONTATION IN GROUP PSYCHOTHERAPY

by



TERESA MINA ANNE DAVIS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY


EDMONTON, ALBERTA

SPRING, 1978

the student's attention to the fact that in writing all
papers, especially those which require the student to report
on his own work, it is essential that the student should
be able to write clearly and correctly. It is essential
that the student should be able to write in a clear and
correct manner. It is essential that the student should
be able to write in a clear and correct manner. It is
essential that the student should be able to write in a
clear and correct manner. It is essential that the student
should be able to write in a clear and correct manner.

TO MY MOTHER AND FATHER

My mother and father, I am writing this letter to you
to tell you how much I love you and how much I am
grateful to you for all that you have done for me.
I am writing this letter to you to tell you how much
I love you and how much I am grateful to you for all
that you have done for me. I am writing this letter to
you to tell you how much I love you and how much I
am grateful to you for all that you have done for me.
I am writing this letter to you to tell you how much
I love you and how much I am grateful to you for all
that you have done for me. I am writing this letter to
you to tell you how much I love you and how much I
am grateful to you for all that you have done for me.
I am writing this letter to you to tell you how much
I love you and how much I am grateful to you for all
that you have done for me. I am writing this letter to
you to tell you how much I love you and how much I
am grateful to you for all that you have done for me.



Digitized by the Internet Archive
in 2022 with funding from
University of Alberta Library

https://archive.org/details/Davis1978_0

ABSTRACT

The purpose of this study was to experimentally evaluate the technique of confronting therapy participants with videotape playbacks of their own previously recorded therapy behavior. Sixteen psychiatric day hospital patients were assigned to one of the following two treatment conditions: Group I (8 experimental subjects participating in 18 televised group therapy sessions and receiving videotape replays of their previous day's therapy behavior in sessions 7, 8, 9, 10, 11 and 12), and Group II (8 experimental subjects treated like Group I but receiving videotape replays in sessions 13, 14, 15, 16, 17 and 18). Transcribed protocols of these group therapy sessions were obtained and the verbal behavior of each of the subjects was content-analyzed according to an observational system developed by the investigator. It was assumed that the data derived from this content analysis would verify the personal testimonials of therapists concerning the therapeutic efficacy of videotape playback. Specifically, it was expected that playbacks would (a) increase the extent to which the experimental subjects focused conscious attention on themselves, (b) increase the self-awareness of the experimental subjects, and (c) significantly influence the self-esteem of the experimental subjects. None of these expectations were confirmed by the data. The findings were discussed in terms of the validity of the observational system and the subjective judgments of clinicians.

ACKNOWLEDGEMENTS

I thank you, firstly, Dr. Hassan Azim, for having made this research project possible by providing willing subjects, skilled therapists, new video tapes and funds for cab fares. I thank you, too, for your constructive commentary and for removing some of my "blind-spots".

I thank you, Dr. Gerry Kysela, for never failing to amaze me with your ability to combine the difficult roles of supervisor and friend, to the mutual enhancement of both. You truly are a man for all seasons.

I thank you, Bernie Krewski and Delores Steffler, for conducting the "treatment sessions" and for contributing so much to my understanding of good therapy.

I thank all of the staff at the University of Alberta Radio and Television Studio; from Brian Kienapple, supervisor, for teaching me how to be a director; to Jack Keech and Glen Coward, cameramen, for their skill and sensitivity; to Gordon Cartz, editor and recorder, for coming in early and helping it all "come together"; and to Richard Kimmel, audio operator, and Harriet Moore, switcher, for their assistance and humor in the control room.

I thank you, Karen Schuller and Bev McNelly, for helping me attain competence with the Self-Awareness Scoring System and for the many hours spent scoring the data.

I thank you, Dr. Tom Maguire, for your help on statistical procedures and for your stimulating tutelage when the results were not at all what I expected.

I thank you, Dr. Larry Eberlein, for having contributed so much to my personal and professional growth over the past eight years.

I thank you, Dr. Harvey Zingle, for your constructive input, particularly at the "beginning" and the "end" of my sojourn as a graduate student in counseling psychology.

I thank you, Dr. Don Knowles who, as External Examiner, offered many appreciative remarks.

I thank you, Dr. Allen VanderWell, for accompanying me on the most terrifying part of the journey that was this thesis.

I thank you, Dr. Dick Kimmis, for reading my thesis and participating in my mock oral. Your empathy, respect, confrontations and humour did much to facilitate me feeling good about me.

I thank you, Mom, Dad, Barry and Mary Anne, for all that you did to help me collate my data.

I thank you, Karen, for loving Christopher in my absence and for valuing our sisterhood.

Finally, and mostly, I thank you, Roger, for being such a superb partner-in-parenting, colleague, lover, supporter, confidante, critic and sharer-in-fun.

TABLE OF CONTENTS

CHAPTER		PAGE
I	INTRODUCTION	1
	Overview	1
	Playback observations and implications	2
	Immediate reactions to videotape self-confrontation	2
	Reactions to continued videotape self-confrontations	4
	Post-therapy effects of videotape self-confrontations	6
	Implications	7
	Purpose of the study	10
II	THEORETICAL ORIENTATION	12
	Awareness	13
	Constraints and capabilities of human information processing	14
	The differentiation and integration of meaning structures	18
	Levels of awareness	22
	An information processing view of self	23
	Self-awareness	36
	Summary	38
III	VIDEOTAPE SELF-CONFRONTATION AS A THERAPY ADJUNCT: RATIONALE AND PROCEDURE	39
	Playback rationale	39
	The client as a deficient information- processor	40
	The therapist as a surrogate information- processor	42

CHAPTER		PAGE
	Videotape playback as an information source	46
	Procedure for obtaining and selecting playback content	48
	Conducting and videorecording "pre-playback" therapy sessions	49
	Selecting videotape excerpts for playback . .	49
	Focus of the study	52
IV	METHOD	53
	Research design	53
	Subjects	53
	Therapists	55
	Facilities, equipment and personnel	55
	Procedure	57
	Collection and scoring of data	60
	Collection of data	60
	The self-awareness scoring system	61
	Developing inter-rater reliability	66
	Scoring the sixteen careers	66
	Inter-rater reliability	67
	Preparation of data	68
	Operationalization of research questions	70
V	RESULTS	71
	Group data	71
	Self, nonself and incomplete acts: dependent variables 1, 2 and 3	71
	Familiar, emergent and denied awareness: dependent variables 4, 5 and 6	78

CHAPTER		PAGE
	Positive, negative and neutral esteem: dependent variables 7, 8 and 9	81
	Repeated measures analyses of the group data	84
	Individual data	84
	Self, nonself and incomplete acts: dependent variables 1, 2 and 3	86
	Familiar, emergent and denied awareness: dependent variables 4, 5 and 6	89
	Positive, negative and neutral esteem: dependent variables 7, 8 and 9	89
VI	SUMMARY AND DISCUSSION	95
	The self-awareness scoring system	96
	The efficacy of videotape self-confrontation in psychotherapy	98
	REFERENCES	100
	APPENDIX A	106
	APPENDIX B	109
	APPENDIX C	127
	APPENDIX D	130

LIST OF TABLES

TABLE		PAGE
1.	Summary of an information-processing view of the dominant assumptions in traditional theories of the self	35
2.	Age, sex and diagnosis of the sixteen psychiatric outpatients who served as experimental subjects	56
3.	Self-awareness scoring system categories	65
4.	Results of ARIMA analyses of effects of VTR intervention on self acts in Groups I and II	75
5.	Summary of F ratios found in each two-factor ANOVA with repeated measures on the time factor for each of the scoring system variables	85

LIST OF FIGURES

FIGURE		PAGE
1.	Rudimentary information-processing flow diagram	9
2.	A schematization of the relationship between the two postulated properties of experience	36
3.	A time-lagged multiple time series	54
4.	Mean number of self, nonself and incomplete acts emitted by the subjects in Group I per 18 minutes of therapy across 18 therapy sessions	72
5.	Mean number of self, nonself and incomplete acts emitted by the subjects in Group II per 18 minutes of therapy across 18 therapy sessions	73
6.	Mean proportion of self and nonself acts emitted by subjects in Group I per 18 minutes of therapy across 18 therapy sessions	76
7.	Mean proportion of self and nonself acts emitted by subjects in Group II per 18 minutes of therapy across 18 therapy sessions	77
8.	Mean number of self acts emitted by the subjects in Group I scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions	79
9.	Mean number of self acts emitted by the subjects in Group II scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions	80
10.	Mean number of self acts emitted by the subjects in Group I scored in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions	82
11.	Mean number of self acts emitted by the subjects in Group II scored in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions	83
12.	Number of self, nonself and incomplete acts emitted by Subject 2 per 18 minutes of therapy time across 18 therapy sessions	87

13.	Number of self, nonself and incomplete acts emitted by Subject 9 per 18 minutes of therapy time across 18 therapy sessions	88
14.	Number of self acts emitted by Subject 2 scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions	90
15.	Number of self acts emitted by Subject 9 scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions	91
16.	Number of self acts emitted by Subject 2 in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions	93
17.	Number of self acts emitted by Subject 9 in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions	94

CHAPTER I

INTRODUCTION

Overview

French psychiatrist Jean Carrere is widely accepted as having been the first to use audiovisual self-confrontation as a therapy adjunct. Carrere (1954, 1955, 1958) used sound films to show alcoholic patients how they behaved when intoxicated. The essential observations he made were twofold, having to do first with the dramatic and awesome effect of audiovisual playback (Carrere described the experience as staggering for the patients), and second with the necessity of editing the films to avoid excessive shock. It appeared that the full presentation of their behavior was too stressful for many of his patients. Subsequently, several other clinicians, using television as the playback medium, have furnished additional observations about the use of audiovisual self-confrontation as a therapy adjunct. Once a set of observations regarding the efficacy of a technique has been made, the next step in science is to create a theoretical system in the light of which these observations are seen to conform and then "prospectively" rather than "retrospectively" evaluate the technique (Paul, 1969). Thus, the present study advances a theoretical scheme to explain how and why audiovisual self-confrontation presumably induces constructive personality change and then uses the scheme to empirically assess the efficacy of videotape playback as a therapy adjunct.

Playback Observations and Implications

Simply to propose a theoretical framework at this point would neglect the need to assess the givens of the reported playback observations. In short, what are the observations that have been made about videotape self-confrontation, and what implications for a theoretical model do they contain?

Most of the identifiable observations of the playback literature are of the clinical report type, with clinicians utilizing different concepts and emphasizing different processes to describe the effects of videotape self-confrontation. Despite these conceptual differences, however, there are three categories of observations which can be identified in the playback literature: (1) the immediate reactions of patients on initially seeing and hearing the playback, termed "image impact" by Alger and Hogan (1967), (2) the reactions of patients to continued playbacks, and (3) post-therapy reactions to the procedure.

Immediate reactions to videotape self-confrontation

The first videotape self-observation experience tends to produce either a marked positive or negative self-image reaction. For instance, Moore, Chernell and West (1965), after presenting 40 psychiatric in-patients with interview replays, reported that the initial videotape playback evoked an almost universal reaction of surprise, displeasure and disbelief. Geertsma and Reivich (1965) reported that 17 per cent of their self-viewing psychiatric patients were openly negative about the experience, considering it "disgusting", "sickening", "heartbreaking", and "awful", while 23 per cent of the patients expressed mixed or guarded

attitudes such as "surprising" and "different". In contrast, 60 per cent of their patients responded favorably, considering the experience "interesting", "informative" and "helpful". However, Geertsma and Reivich also found that the initial self-observation experience evoked anxiety in 77 per cent of their patients, indicating that patients who considered the experience helpful were nonetheless discomforted by it.

In a later paper, Reivich and Geertsma (1968) mentioned that some patients reacted initially by recognizing their similarity to a significant relative, and that for most patients this recognition was "shattering". Berger (1970) commented on this "perceived similarity phenomenon" and expressed regret that Geertsma had given it only passing mention because he had frequently seen such recognitions "trigger startling shock reactions which were important milestones for therapeutic insight and progress . . . (p. 21)".

Berger's observation that the shock of the initial video playback somehow facilitates therapeutic progress was similarly noted by Alger and Hogan (1967). Indeed, they believe that the degree of emotional response is a significant factor capable of predicting how helpful additional playbacks might be for a given patient. According to these therapists, patients who show a marked reaction, either positive or negative, to first seeing and hearing themselves in action continue to engage more fully in the therapeutic effort and make more significant and rapid changes. On the other hand, those who seem unreactive to the initial "image impact" are more difficult to engage in therapy and are more detached from an awareness of their feelings.

Reactions to continued videotape self-confrontations

Most of the observations regarding the effects of continued therapeutic playbacks support the hypothesis that audiovisual self-confrontations induce positive personality change. Specifically, these observations indicate that intermittent playbacks facilitate the achievement of self-awareness, thereby effecting behavioral change. However, the possibility that playback induces or exacerbates forms of disturbance in certain patients has also been mentioned. Observations, representative of each of these outcomes, are presented next.

Therapists reporting constructive personality change have used a variety of theoretical frameworks to explicate their results (Bailey & Sowder, 1970, p. 134). For example, Alger and Hogan (1967), using a communicational frame of reference, credited videotape playbacks with rapidly increasing marital partners' awareness of the "multiple channels of communication (p. 164)" between them. Moreover, they reported that this increased awareness facilitated the interruption of blame-patterns and increased co-operative behavior. Parades and Cornelison (1965), using a role orientation, reported that audiovisual self-confrontation "in the presence of and with the assistance of a trained therapist (p. 28)" helped alcoholic patients become aware of the self-deceiving and self-defeating mechanisms they had been using to deny or conceal their role conflicts and low self-esteem. Following achievement of this self-knowledge, these patients were apparently motivated to work towards finding new ways of handling their problems other than through drinking. Berger (1970), using a theoretical view which acknowledges "subconscious or hidden motivation . . . the significance of signs and symbols . . . resistance

. . . transference . . . and multiple levels and channels of communication (p. 119)", reported that his private practice individual, family and group session patients achieved heightened awareness of their "psychic, emotional, behavioral and body identity (p. 119)" following playbacks. According to Berger, this heightened awareness led to insights which served as an enlarged basis for these patients "wholeheartedly working through (p. 95)" what needed to be given up. The content of the insights reported by Berger included oedipal ambivalences (p. 126), idealized images (p. 136) and security strategems (pp. 128-137). Finally, Kubie (1969), a psychoanalyst, reported that repeatedly re-exposing a psychoanalytic patient to videotape replays of himself in different moods and states of mind, in different periods of stress and peace, significantly increased the patient's spontaneous and free production of conscious, unconscious and preconscious material. This additional material was interpreted and the patient thereby reportedly achieved earlier insight into the unconscious determinants of his maladaptive behavior.

The possibility that playback induces or exacerbates forms of disturbance in certain patients has also been reported. There appears to be no question, for example, that videotape self-confrontation of drunken comportment is extremely aversive for alcoholic patients (Parades, Ludwig, Hassenfeld, & Cornelison, 1969; Schaeffer, Sobell, & Mills, 1971). Moreover, such stressing of the alcoholic patient reportedly induces, rather than suppresses, renewed drinking (Schaeffer, Sobell, & Mills, 1971). With respect to nonalcoholic patients, Geertsma and Reivich (1965) reported that some self-viewing depressed patients became more depressed, some schizophrenic patients engaged in more bizarre behavior, and some

neurotic patients showed an increase in the symptoms characteristic of their disorder. Additionally, Berger (1970) noted that videotape self-confrontations could heighten feelings of unlovability, inadequacy and low self-esteem in both neurotic and psychotic patients, precipitating a serious crisis. Berger's (1970) observations were corroborated by Danet (1967) who compared an experimental playback group to a control nonplayback group and found there was a tendency for the playback group to be more anxious, less positive in their self-evaluations, and lower in ratings of self-improvement than was the control group.

Post-therapy effects of videotape self-confrontations

Alkire and Brunse (1974) appear to be the only therapists who have reported their findings on the post-therapy effects of videotape self-confrontation. Their follow-up data, concerning marital disruption and suicide during or immediately following group treatment for disturbed marital couples, gives evidence that playback may produce a high "casualty" rate (6 casualties out of 9 marital dyads receiving playback versus 7 casualties out of 41 dyads not receiving playback).

To summarize, a number of clinicians have used videotape playback as a therapy adjunct with a large number of patients in individual, group, family and conjoint marital therapy, and they all credit videotape playback with increasing self-awareness. In most cases this increased awareness apparently led to therapeutic gain; that is, patients became more objective and realistic in their self-evaluations, accepted personal responsibility for their behavior and attempted to change it. In other cases, however, the consequent self-awareness reportedly led to a "deterioration effect" (e.g., depressed patients became more depressed,

psychotic patients behaved more bizarrely, etc.) and/or suicide.

Implications

Obviously, the clinical observations cited above do not specify a clearly articulated theoretical system. They do, however, singly and together point toward a paradigm of the form:

playbacks —————▶ increased self-awareness —————▶ behavior change

This paradigm embodies two tacit assumptions: first, that the patient's awareness of his own attributes, properties and processes is "expanded" by self-observation; and second, that this "expanded" self-awareness causes the person to generate diverse therapeutic and distherapeutic behaviors. Thus, the paradigm emphasizes the crucial role of audiovisual self-confrontations, but views them as informational inputs whose behavioral impact depends on how they are processed by the person.

Although the achievement of expanded self-awareness is considered the essential goal of playback treatment, the term "self-awareness" has never been adequately defined (Duval & Wicklund, 1972) nor has the manner in which it supposedly mediates behavior change ever clearly been specified (Bandura, 1969). The difficulties of defining self-awareness and describing its relationship to therapeutic change can largely be attributed to the fact that clinicians using playback have ignored work in the area of information-processing psychology. It is unclear whether ignoring this area is due to a lack of knowledge or due to the possibility that clinicians using playback find the "objectiveness" of information-processing concepts incompatible with their own emphasis on the personal and subjective nature of the self-confrontation experience. Whatever the reason, ignoring the area of information-processing psychology is

quite regrettable, because between the stimulus (playback) and the response (behavior change) not just an intervening variable (self-awareness) intervenes, but a whole complex of actively interacting cognitive systems. These systems may best be elaborated with reference to Figure 1, a rudimentary flow chart emphasizing certain input, consolidation and output aspects of human information-processing.

Like all such flow diagrams, the present one is perforce schematic, providing merely an overall theoretical format for more detailed development. A number of salient features follow:

1. The figure emphasizes a multisystem approach to cognitive processing. The overall system comprises a multiplicity of subsystems (the components of Figure 1), with each in turn encompassing an implicit set of unspecified lower order subsystems.

2. The flow of input information (solid lines), continuously recoded in passage from one system to another, is multidirectional; it can flow backwards as well as forwards.

3. Memory contact between systems does not imply memory transfer. Thus, examination of the contents of one system by another system (denoted by the dotted lines in Figure 1) does not yield storage of the examined information, or consciousness of the information examined. Storage is achieved through control commands (also denoted by dotted lines) for the requisite sequence of cognitive operations.

4. Memory contact between systems may initiate disruption of ongoing storage operations. Thus, for example, long-term memory may, on the basis of analysis of input information to sensory storage, stop further encoding of that information.

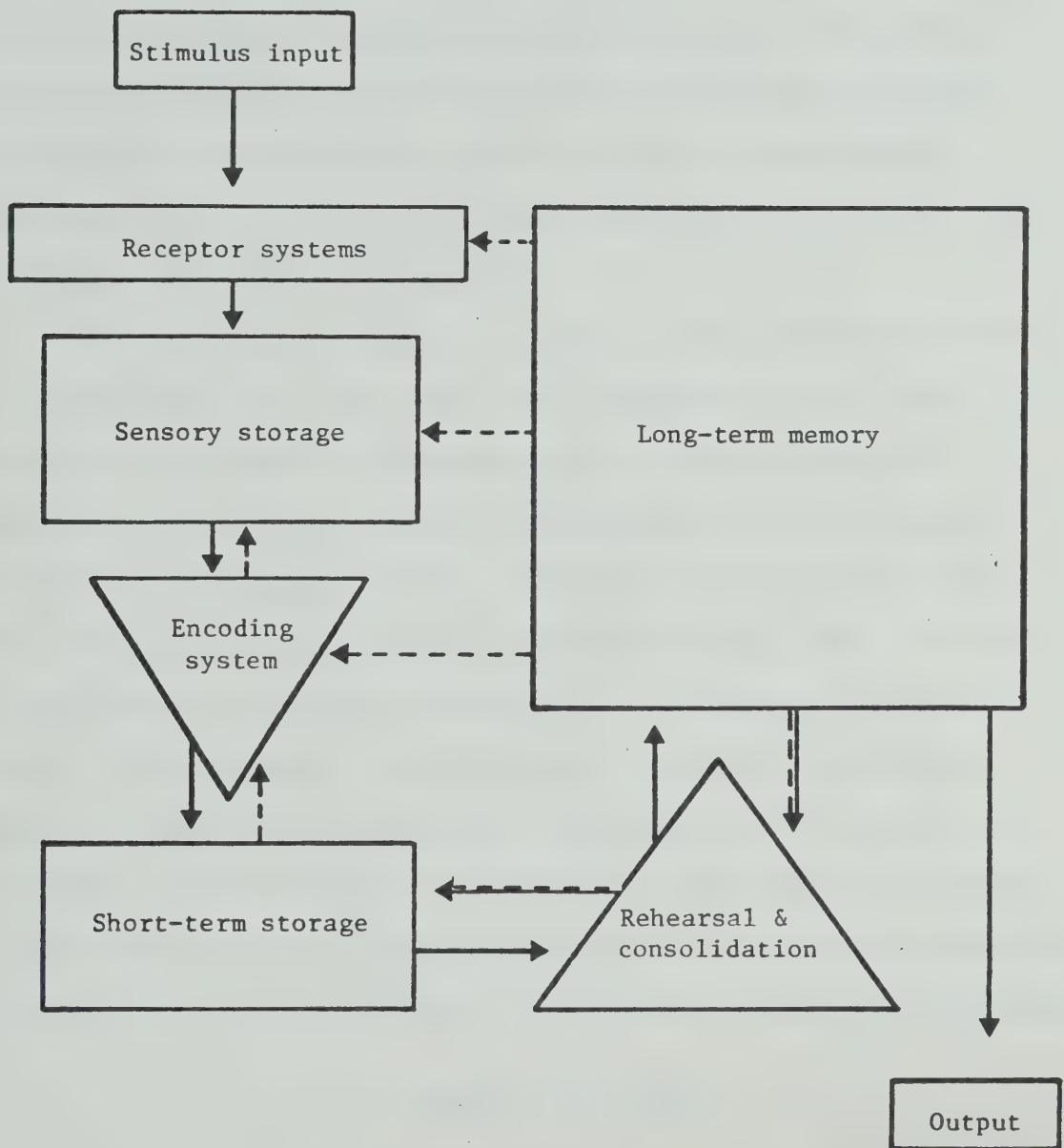


Fig. 1. Rudimentary information-processing flow diagram. Solid lines indicate flow of input information; dashed lines indicate possible memory consultations between systems (without storage), or control commands for executing specific tasks.

5. The processing region at which conscious identification (awareness, experience, focal attention) of the input is finally achieved is thought to be in or near the short-term storage system, beyond the encoding system but prior to long-term memory (Haber & Hershenson, 1973; Shiffrin & Atkinson, 1969; Shiffrin & Geisler, 1973; Sperling, 1967; Waugh & Norman, 1965).

While it is always awkward to attempt to link a phenomenal concept to a functional model, the issue is of considerable import since "self-awareness" by common understanding tends to denote a subjective experiential event that occurs at a particular point or loci in the information-processing continuum. The point of view advanced here is that the "information-processing revolution (Erdelyi, 1974, p. 2)" has brought about a sufficient refinement of the metaphors of cognition to permit "self-awareness" to be defined and connected to operational methods of empirical investigation. Additionally, it is specifically suggested that the framework of information-processing psychology can appropriately be used to meaningfully deal with the verbally simple but theoretically profound idea that self-observation expands self-awareness.

Purpose of the Study

The present study investigates the widely held view that videotape self-confrontations accelerate the development of self-awareness in therapy participants. It comes to terms with two obstacles that have hampered empirical investigation of the self-confrontation hypothesis in the past; namely, the conceptualization and operationalization of self-awareness and the difficulties of adequately describing, measuring

and controlling playback treatment. In short, the thesis develops a conceptual-operational package and then uses the package to assess the validity of the self-confrontation hypothesis.

CHAPTER II

THEORETICAL ORIENTATION

Despite Lewin's (1935) injunction to use Galilean modes (theory building by discovery of abstract relationships) rather than Aristotilian modes (theory building by naming), previous efforts at explaining how and why playback confrontation presumably induces change have tended more towards naming. Clinicians, in an effort to find a theoretical harbor for the growing body of playback observations, hit rather uncritically on the notion of ascribing the changes they observed to the achievement of "expanded" self-awareness. While this notion carries respectability because it is commonly believed that productive therapy will produce "expanded" awareness, it should be emphasized for the sake of precision that no explicit attempt has been made to relate the concept of self-awareness to the self-confrontation process (Bailey & Sowder, 1970, p. 134). Additionally, the manner in which self-awareness supposedly mediates behavior change has never been clearly specified (Bandura, 1969). It is unfortunate that the nature of self-awareness, especially its determinants, has been given light treatment, for a theoretical understanding of the phenomenon could lead to a more complete understanding of behavior in general. The aim of this chapter is to set forth a new, extended, modified, and more specific conceptualization of self-awareness with the hope that it will provide not only a clearer conceptual approach for developing an operational technique, but also a conceptual basis for explicating a playback rationale.

The first section of this chapter will use an information-processing

framework to conceptualize and define "awareness". The next section will develop a number of basic tenets of what may be termed an information-processing view of "self". Essentially, this view is a modification of traditional theories of self, based on extensive research of recent vintage. The final section of the chapter will synthesize the conceptualizations of the previous two sections leading to an explication of the observational operations necessary to measure self-awareness in the therapy context.

Awareness

In order to develop an information-processing conceptualization of awareness, it is useful initially to make a basic distinction among the terms "information", "experience" and "awareness". Information is the raw data or input for experience and it may come from stimulus sources external and/or internal to the person. Raw input from external sources refers to the vast amount of information existing at any moment in time that can potentially be processed through the different sensory modalities (e.g., visual, auditory, tactile). Raw information coming from internal sources may be of two basic types: (a) sensory information from internal sources (e.g., muscle movement, arousal, etc.) and (b) stored information from long-term memory. Whatever the source, this information does not constitute experience. Experience is a construction---manifested in sensorimotor, perceptual, and/or conceptual forms---generated from this information, produced within the constraints and capabilities of the system operating on the information. Since sensorimotor and perceptual experiences are un verbalized (i.e., not conceptual by definition), they are covert or implicit. In contrast, conceptual experience is overt or

explicit (i.e., the person can verbalize his experience). The concept of awareness refers to the degree to which an individual's experience involves conceptual cognition of the information being processed. Thus, by definition, the extent to which experience is associated with conceptual rather than sensorimotor or perceptual functioning is the extent to which it is associated with greater degrees of awareness.

With this preliminary distinction, it is possible to proceed to a brief summary of the principal capabilities and constraints of human information processing. Because the ultimate concern here is a relatively rigorous definition of "awareness", the discussion will focus on the handling of information in short-term memory and consciousness and will not give serious consideration to the preliminary series of sensory and intermediate buffers in between which preliminary feature analysis of sensory information takes place. Consideration of information-processing at these stages can be found in Hunt (1971) and Neisser (1967).

Constraints and capabilities of human information processing

Whether a person is processing information from external sources, from internal sensory sources, from long-term memory, or from all three simultaneously, the universe of information available to be processed at any instant in time is of staggering magnitude. The major constraint of the system is that at any instant it can only operate on and process an extremely limited amount of information, usually thought to be five to nine units of information (Miller, 1956). The net effect is that some information must selectively be attended to, while a large amount of information is inevitably lost for further processing.

Whatever the source of the information, it travels first in a raw, uncondensed, and unprocessed form through a series of buffers, in between which some initial analysis of "preprocessing" of the material takes place. This preprocessing of information consists primarily of putting it into units (e.g., configurations of features) for analysis of its meaning later on in the processing sequence. These units are then held temporarily in short-term memory for further processing. As a holding area, short-term memory is extremely limited in the amount of information it can hold. Moreover, if the information held there does not fairly quickly enter into consciousness, it is interfered with by other information coming into short-term memory and will be less accessible for processing. One way that information can be retained in short-term memory for subsequent processing is through rehearsal. Although this capability of the system will not be very relevant in this chapter, it will be of importance in the later explanation of how videotape playback can be used to facilitate the psychotherapy process.

Although the constraints of how much information can be processed necessitate that some information will never be consciously identified because of loss from short-term memory, the capabilities of the processing system also permit a considerable richness of information to be consciously identified and transferred to long-term memory. The principal means by which processing limitations are transcended and a richness of information retained within the limitations in processing capacity is through consolidation. Consolidating or organizing information involves the ongoing and joint use of two specific cognitive operations: the differentiation of meaning and its integration (Wexler, 1974). Both

operations are seen to have in common the creation of meaning structures:

A meaning structure is a symbolic organized synthesis, in thought or speech, of information from external and/or internal sources. Such an organization refers not only to the generation of linguistic structures to organize information, but also to the creation of images to synthesize relevant features and attributes of the information being attended to. (Wexler, 1974, p. 64)

Thus, whether a person says "This is a chair", or "I feel helpless", or describes a vivid scene he has imagined, we may think of him as creating meaning structures to consolidate the information he is attending to at the time. It is the activity of differentiating and integrating information into meaning structures that enables a considerable richness of information to be preserved and transferred into permanent storage in long-term memory, and it is this activity that is commonly called experiencing.

The meaning structures generated in consciousness and transferred to storage in long-term memory are not literal re-presentations of the information in short-term memory, but organizations constructed and transformed on this information through the use of rules. Rules refer to the procedures used in differentiating and integrating information into meaning structures. The concept of rules has found similar expression in psychological theory under the terms "plans" (Miller, Galanter, & Pribram, 1960) and "schemata" (Piaget, 1963). As information is held in short-term memory, rules that are appropriate for the handling of that information enter from long-term memory to operate on and organize the information. Long-term memory, then, not only contains stored information to be fed back into the system via short-term memory, but also contains the repository of procedures for handling information.

In its latter role, long-term memory is analogous to the program library of a computer (Hunt, 1971), containing systems for operating on and managing data being processed in the system. In its other role, it is also the repository of data (stored information) for processing.

The range of rules a person has for organizing information is of crucial importance in determining the fate of information in short-term memory. If the system contains no rules for handling the information held in short-term memory, this information cannot be operated on and will be lost from short-term memory. If the system does contain rules, they may be capable of organizing some features of the information and incapable of dealing with others. Consequently, only some of the relevant features of the information will be attended to, processed and organized, while other features will be lost.

Although the range of rules a person has for organizing information is of crucial importance in determining whether information can be adequately processed or whether it will be lost or inadequately processed, one's repertoire of rules need not remain fixed. When one is faced with organizing the set of features in some new information, it may be that several rules, applied simultaneously in some new combination, may prove to be adequate for its organization. This occurrence, analogous to what Piaget (1963) has termed "accommodation" or the "differentiation of schemata", can generate a new rule that represents a unique combination of the existent rules that have been applied. This new rule can then be stored in long-term memory, along with the person's existing repertoire of rules, for future use in organizing information.

In sum, then, experience is a meaning structure that is created

within the constraints and limitations of the information processing system. The diversity of meaning structures one can create ultimately rests on the diversity and flexibility of the processing rules one has in long-term memory. Moreover, creating meaning structures to consolidate or organize information means that only some of the information in the system is being attended to and in the process other information is inevitably lost from short-term memory. Thus, although the extraordinary ability to create experience enables man to organize and preserve a diversity of information in his world, a price is paid for this activity in terms of the loss of an enormous richness of information that exists at any moment in time.

The differentiation and integration of meaning structures

While the concepts of differentiation and integration have been emphasized in the personality literature (Lewin, 1935; Witkin, 1965; Witkin, Dyk, Faterson, Goodenough, & Karp, 1962), they have been typically used to refer to complexity in the structure of personality that permits the person to construe information and respond to it in a multidimensional fashion. In the present view, the concepts of differentiation and integration refer directly to specific cognitive operations used on a moment-to-moment basis in the ongoing processing of information. Similarly, whereas the concept of cognitive structure has been used in personality theory to refer to the relatively enduring, internal conceptual organizations through which information is processed (Harvey, Hunt, & Schroder, 1961; Kelly, 1955), here structure refers to a symbolic organization generated on a moment-to-moment basis in the ongoing processing of information.

Before explicating how individuals use the operations of differentiation and integration in their ongoing, moment-to-moment processing of information, it is essential to note that the activity of creating meaning structures is likely to internally evoke other associated facets of information that can provide a substrate for further differentiation and integration. Thus, the creation of experience, through one's processing of information, may evoke information from long-term memory (such as memories of past experiences or images) and/or kinesthetic information (such as arousal or a parched throat). Whatever the particular internal information evoked, it is fed back into short-term memory, where it is held until it is organized into a subsequent meaning structure or lost for further processing.

The differentiation of meaning structures. The differentiation of meaning refers to the activity of elaborating a more particular facet of meaning in the information being processed (Wexler, 1974). More specifically, it involves creating a meaning structure that organizes the meaning of some facet(s) of information evoked by a previous meaning structure. The structure created can be seen to be subordinate to the preceding structure insofar as it functions to 'unpack' and distinguish a more particular aspect of the meaning of its preceding structure.

Let us consider an example, cited by Wexler (1974, pp. 69-71), to illustrate how meaning is differentiated on the basis of information evoked by a previous meaning structure. Let us consider someone who in describing his state of depression says: "I feel very much alone." This meaning structure may evoke a whole range of information which, for illustrative purposes, might include the following:

. . . fleeting thoughts of a lack of someone who cares for him, a desire for a meaningful relationship, fragmentary memories of himself lying on his bed staring at the ceiling on a Saturday night, seeing the cold faces on a streetcar staring indifferently ahead, or walking alone on a rainy night looking up at the lighted windows in an apartment building. (Wexler, 1974, pp. 69-70)

The range of this evoked information, however, is likely to be far greater than can be organized by the person's processing rules.

Consequently, only some of the facets of this evoked information may be attended to and organized into a subsequent meaning structure while other facets will be lost from short-term memory.

After saying "I feel very much alone" the person goes on to say: "Like nobody really cares what happens to me." This second statement is a subordinate structure to the first statement in that it distinguishes a more particular aspect of what being "very much alone" means to the person (i.e., it distinguishes a more particular facet of information evoked by a previous meaning structure). Moreover, differentiating this meaning structure evokes a new range of information which is fed into short-term memory, crowding out the information evoked by the first meaning structure and making it less accessible for processing.

Let us suppose the person continues by saying: "Kind of brings to mind this picture of one of those old people you see who just kind of exist in their one-room apartments. Nobody in the world even caring they exist." Here his statement about nobody caring for him has evoked a rather poignant remembered image, which he attends to and processes. The first part of this third statement referring to elderly people in their one-room apartments represents a subordinate structure to the second statement in that it differentiates and elaborates in more detail

what nobody caring for him is like to him. The last part of this statement about the elderly people (nobody in the world even caring they exist) differentiates further the meaning of the memory in implicitly elaborating its relation to his current field.

The differentiation of meaning, as illustrated above, may be seen to have three effects (Wexler, 1974). First, the person creates change in experience by this activity. Second, by distinguishing new facets of meaning in the experience, it becomes more meaningful. Third, the new facets of meaning that have been differentiated may provide an informational substrate from which the person can create a superordinate structure that captures their common meaning.

The integration of meaning structures. The integration of meaning structures refers to the activity of synthesizing the meaning of the different facets of information that have been distinguished (Wexler, 1974). More specifically, it involves creating a superordinate structure that captures a common meaning in these differentiated facets. Thus, an integrating meaning structure should not be thought of as a mere summation of the subordinate structures. Rather, it is an actively synthesized construction generated from information evoked by these subordinate structures.

Let us return to the person we have been discussing to illustrate how a portion of the psychological field, changed through the differentiation of meaning, can be reorganized through the integration of meaning. After having differentiated loneliness in terms of a lack of somebody caring for him and the associated memory of elderly people (nobody in the world caring they exist), the person goes on to say:

"I am scared that for my whole life I will always be alone." This statement represents a superordinate structure that generates a common meaning and gives new organization to the preceding statements. We might infer that the memory of elderly people evoked in the person a consideration of his future in relation to his present experience. His subsequent statement (I am scared that for my whole life I will always be alone) organizes the meaning of the continuity between his present and his future. Thus, there has been reorganization and change in the person's psychological field in that his sense of being alone has been reorganized with respect to remembered material and changed to a fear of spending the rest of his life lonely.

To summarize, the creation of experience was seen to involve the ongoing and joint use of two specific cognitive operations: the differentiation and integration of meaning. Moreover, both operations were seen to have in common the creation of symbolic organized representations of information arising from either internal or external sources (i.e., meaning structures). To differentiate meaning was defined as the activity of elaborating a more particular facet of meaning in information being processed. To integrate meaning was defined as the activity of synthesizing the meaning of differentiated facets.

Levels of awareness

While the creation of meaning structures to organize information is ubiquitous in human functioning, it is very likely that within and between individual differences exist with respect to how adequately individuals differentiate and integrate meaning for themselves and, consequently, in how much change and reorganization they create in their psychological

field. These differences in differentiation and integration can be understood as varying levels of "awareness". For the purposes of this study two levels of awareness have been defined: familiar and emergent awareness. Familiar awareness is a state wherein the person inadequately differentiates and/or integrates meaning and thus fails to create reorganization and change in experience. Conversely, emergent awareness is a state wherein the person increasingly and adequately differentiates and/or integrates meaning and thus achieves reorganization and change in experience. These levels of awareness have been operationalized in a content analysis scoring system to be discussed in the Methods chapter.

An Information Processing View of Self

The taproots of traditional theories of self (cf. Wylie, 1968 for an overview of these theories) are embedded in two vastly different conceptual soils. These precursors must be briefly glimpsed in order to set the stage for outlining an information processing view of self. One major contribution stems from the early psychoanalytic concept of the ego, which led to a strong interest in coping behavior on the one hand and in the person's modes of viewing himself on the other. This latter emphasis is most clearly elaborated in the writings of Sullivan (1953), Horney (1945), and Rogers (1959). The second major contribution is more scholarly than orthogenically oriented and stems from the formal theorizing of Charles Cooley (1922) and George Herbert Mead (1934). This tradition has largely been perpetuated by psychologists and sociologists carrying on systematic empirical work in a variety of research settings.

It is possible to glean from these two traditional sources a number

of major propositions held in common (Gergen, 1971). This is not to say that all have utilized the same concepts or emphasized the same processes; however, there are a number of basic assumptions that recur with considerable frequency. It is worthwhile at this juncture to enumerate them in order that the information processing view of self, to be presented next, may be delineated more clearly. The following can be said to be the prime assumptions in the traditional mold:

1. Experience. All men are capable of conscious experience. (This, of course, is the phenomenological premise.) To elaborate, an ever-changing flux of internal and external stimulus energies impinge upon the person. These energies, once received, are termed "experience". As experiences occur in the life of an individual, they are judged by an inner unconscious homonculus for their consistency with internal standards (e.g., superego, ideal self, self-construct system). If an experience is judged to be consistent with the internal standard(s), it is allowed into consciousness and accurately symbolized. If an experience is judged to be inconsistent, however, threat arises and one of two defensive operations may occur: (1) the experience may be denied conscious symbolization and kept in the unconscious mind, or (2) the experience may be distorted so as to make it consistent with internal standards and then consciously, but inaccurately, symbolized. Thus, traditional theories make a distinction between defensiveness and openness and note that openness to experience is an attribute of the fully functioning person. To quote Rogers (1959):

. . . to be open to experience is the polar opposite of defensiveness . . . It signifies that every stimulus, whether originating within the organism or in the environment, is freely relayed through the nervous system without being distorted or channeled off by any defensive mechanism (p. 206)

2. Self-experience. Conscious experience may be roughly divided into two categories: self and not self. The dimensions of self-experience are theorized to be the continuities of bodily awareness (e.g., the theories of Cooley, 1922; Anygal, 1941; Allport, 1955; Miller, 1963; Bakan, 1966; Tabachnick, 1967), social identity (e.g., the theories of Sullivan, 1953; Goffman, 1959; Biddle & Thomas, 1966; Kay, 1966), and values (e.g., the theories of Allport, 1955; Maslow, 1959; Rogers, 1959; Frankl, 1959) (cf. Waterbor, 1972 for a comprehensive discussion of these dimensions). Thus, according to traditional theories, a person is able to experience himself on the basis of bodily awareness; that is, the regularities of perception of bodily states ("I am a cold, sleepy man"); the continuities of social life, symbolized by the unique position each person holds in the matrix of human social relationships ("I am Bill's brother"); and/or the continuities of valuing, the persistent beliefs, attitudes, and goals which mark the individual personality ("I am a believer in Christ").

3. Reflected appraisal. A person's experiences of himself are primarily reflections of the ways in which others experience him. The essence of this assumption is that the person's psychological makeup lacks some essential component that is necessary for selfhood and self-consciousness, and this component is supplied in interaction with the social other. In psychology this approach has been most forcefully articulated by Mead

(1934) and Cooley (1922). We will take Mead as an example.

In Mind, self, and society Mead argues that selfhood cannot be constituted by a person's subjective consciousness of his body. To ascend to true selfhood Mead believes that the person must "get outside himself experientially (Mead, 1934, p. 43)" by taking the role of the social other. When the person assumes this exterior vantage point and sees himself through the other's eyes (that is, becomes an object to himself) self and consciousness of self, according to Mead, occur simultaneously. Thus, in the traditional view, there are two distinct forms of consciousness: an original type of consciousness, and a consciousness which is the result of a unique interaction and combination of two separate consciousnesses (i.e., a transmutation of the other person's consciousness of oneself into one's own).

4. Core self. Over time, a unified core of self-relevant experiences is developed. This core persists over time and across circumstances and markedly influences the behavior of the individual. Over time, for example, the person may come to have a clear, dependable set of experiences of himself that include his being a male. This notion will guide his behavior across varying situations and will insulate him from behaving in ways that are, from his point of view, nonmasculine.

5. Basic esteem. The most important type of self-experience is evaluative in nature. From early childhood the person comes to experience himself as "good" and/or "bad". This core set of evaluations is of crucial significance in later life and is often causally linked to various forms of neurotic behavior (e.g., the theories of Fromm, 1947;

Horney, 1945; Rogers, 1959).

While influenced by these five propositions, the information-processing view of self is very much colored by recent theoretical and empirical work in the areas of perception, imagery, memory, and thought (see Lindsay & Norman, 1972 for a comprehensive treatment of work in these areas). Although this work is far from a unified body of knowledge, consisting as it does of varied models, diverse concepts, and differing interpretations of the experimental data, some of its central tenets seem common enough to allow the following conclusions.

First, persons not only adapt, but grow psychologically, through the continuous extraction and use of information from stimulation. Second, such information extraction and use can be broadly conceived of as information processing. Third, this information processing is unceasing from birth to death and draws upon both (a) the unending availability of information in internal and external stimulation and (b) previously extracted and used, or stored, information. Fourth, this information processing is always selective, and thus to a degree always optional, due to the person's limited information processing capacities. Fifth, this information processing occurs in stages, takes time, and requires allocations of attentive capacity. Sixth, this information processing builds upon itself, resulting in a store of abstracted rules and schemas that come to guide and direct much of perception, imagery, memory, thought, and behavior. Seventh, these rules and schemas often prove inimical to psychological growth, in part due to the very ease and economy with which they come to function and in part due to their misapplication and/or general impoverishment.

At this juncture we may return to the set of historically derived assumptions and show how each has been modified or elaborated in a way that reflects these current information-processing tenets.

1. From experience to the extraction and transformation of information.

Rather than thinking of the person as a passive recipient of stimulus energies and equating experience with these "received" energies, it is more appropriate, given what we now know, to think of the person as creating experience by actively selecting, operating on, organizing, and transforming information from stimulation. In short, experience is not something that already exists in stimulation to which the person may or may not be "open", but is an active construction the person generates by extracting and using information carried by, or contained in, stimulus energies. Thus, the point of view advanced here is that if a theory of self is to be indeed viable it should be consistent with what is known about the cognitive processes, and therefore should be built on a view of man as an active agent and molder of his experience and not on a view of man as a passive recipient who is "open" to experience.

Viewing man as an active agent and molder of his experience suggests a concrete resolution to the homunculus, little-man-within-the-head problem contained in the traditional view of experience (Erdelyi, 1975). Indeed, it makes the invoking of an "unconscious manikin" (Eriksen, 1958) unnecessary. Information is not "subceived" to be inconsistent with an internalized standard and then "denied" or "distorted". Rather, either there are no rules present for organizing the information and it is therefore lost in the sequence of nonconscious processes prior to experiencing (denial), or the rules available can only organize some

of the features of information and not others; hence what is experienced does not adequately reflect all that is contained in information (distortion) (Wexler, 1974). Thus, defensiveness (i.e., the selective processing of information) is inevitable and is a function of cognitive control processes rather than a purposive, unconscious homunculus.

2. From self-experience to dimensions of cognition. While it is agreed that the distinction between self and nonself experiences is a useful one because it distinguishes a self-psychology from an all-inclusive psychology of experience, it should be realized that this distinction embodies two tacit assumptions. First, it assumes that the individual can regard himself as an object in the same way he regards objects in the external world. Put in other terms, the interbehavioral field of the human can include perceptions and cognitions referable to his own body, to his own beliefs, his own status, and so on. Secondly, the distinction between self and nonself experiences assumes that conscious attention cannot be focused simultaneously on an aspect of the self and a feature of the environment. When a person's attention is directed toward a consideration of his virtues, for example, it is impossible at that same instant to focus conscious attention on the color of another's eyes. Attention may oscillate between the self and the nonself, and the oscillation may be rapid enough so that attention approximates the appearance of taking two directions at once (Duval & Wicklund, 1972), but it is a theoretical assumption that the possibility of directed attention toward an aspect of the self and toward external events simultaneously is impossible.

The present orientation also leads to further elaboration of the experiential field termed "self". To say that one may be conscious of

attributes, properties and processes that pertain to oneself (viz. the dimensions of bodily awareness, social identity, and/or values) suggests not just a complex process of conscious interpretive activity, but a resultant accruing self-conception as well. As Gergen (1971) put it:

The notion of self can be defined first as process and then as structure. On the former level we shall be concerned with that process by which the person conceptualizes (or categorizes) his behavior - both his external conduct and his internal states. On a structural level, our concern is with the system of concepts available to the person in attempting to define himself (pp. 22-23).

Formulation of self-experience as a process of conscious interpretive activity and the resultant accruing structure of self-conceptions leads, at a minimum, toward the following distinctions:

(a) Degree of differentiation. Persons vary in the degree to which they differentiate themselves (Gergen, 1971). Further experience should lead to further differentiation, although within any age group some persons should be more differentiated than others (Gordon, 1968).

(b) Saliency. For those self-aspects that are differentiated, one can assume further differences in saliency. That is, the conceptual categories a person uses to define himself will not be equally available or conscious to the person at any given moment. Rather, certain concepts will be salient and relevant at one time and others at another. The central factors that affect saliency appear to be the amount of training, the stimulus situation, and the motivation at a given moment (Gergen, 1971, pp. 31-33).

(c) Consistency. Given the existence of multiple self-referential concepts, one may also consider the relationship among the particular conceptual elements. Consistency theories (cf. Glass, 1968, for an overview of these theories) assert that individuals strive for consistency

among their various conceptions of self.

(d) Rigidity. Some self-conceptions may be more recalcitrant to modification than others. For example, a woman whose child is emotionally disturbed may cling steadfastly to a conception of herself as a "good mother". To cease believing in herself as a "good mother" would be to face the guilt and anguish resulting from the awareness that she may have been partly responsible for her child's "disturbance".

3. From reflected appraisal to the development of self-consciousness.

The third traditional orienting assumption was that the person lacks some essential component that is necessary for self-consciousness and that this component is supplied when the person takes the role of the social other. The general idea behind this assumption is a sophisticated conception of two distinct forms of consciousness: an original consciousness, and a consciousness which is the result of a unique transmutation of the other person's consciousness of oneself into one's own. This assumption falls apart, however, as soon as one introduces an information processing model. First of all, there are not two qualitatively different types of consciousness, but two foci for one type of consciousness - i.e., the person himself and the external environment. Secondly, to be self-conscious a person does not have to "borrow" either the substance of self or an external point of view. Self-consciousness occurs because consciousness can focus its attention on the self in the same way that attention is focused on any other object. If the object-like nature of the person has been discovered and stimuli in the environment are such that conscious attention turns in the direction of the person, the person will become self-conscious. Thus, the point of view advanced here is

that the reflected appraisal assumption is inaccurate.

It is important to note at this point that although we have rejected the social other as the source of self-consciousness, we would not eliminate the importance of the social other in the development of self-consciousness. Obviously, the mere fact of having the ability to focus attention on something that is an object does not of necessity mean that the child is automatically aware that he is a unique, separate entity in the world. Indeed, the child gains this knowledge only as experience with a social other's differing point of view accumulates:

The child will differentiate . . . (himself) . . . as a unique object in the world and become capable of self-consciousness only when his assumption of the universality of perception is contradicted by a demonstration that perceptual, mediational, and behavioral processes different from his own do exist . . . (Duval & Wicklund, 1972, p. 41).

Thus, the ability of the child to take himself as the object of his consciousness can be framed in terms of a transition from a state of pre-discovery of the "self" to a state in which the "self" is known - i.e., a transition from egocentrism to self-consciousness, to use Piaget's (1966) terms. Moreover, contact with a differing other is considered to be the sole circumstance in which the child will achieve this knowledge (Duval & Wicklund, 1972, p. 53).

4. From the core-self to the self-schema. An information-processing view leads away from the long-standing assumption of a unified "core" or "gestalt" of self-perceptions toward a consideration of the "self-schema" - i.e., the abstraction or representation of self-experiences that is stored in long-term memory. While this schema (in common with other schemas) can be viewed as adaptive and helpful to acts of discrimination,

memory, thought, and behavior, it can also be viewed as maladaptive and inimical to personal growth because of its generalization and gap-closing functions. For, to the extent that the self-schema is brought into play to supplement gaps in current informational input, the options inherent in information pertaining to the person may either be denied or distorted. However, if the person's attentive capacity is refocused or redirected toward previously neglected aspects of himself (viz. the dimensions of bodily awareness, social identity and/or values), then the person's self-schema may be subject to change. This occurrence (analogous to what Piaget (1963) has termed "accommodation" or the "differentiation of schemata") has recently been conceptualized as characterizing personal growth (Anderson, 1974).

5. From basic esteem to experiential specificity. The importance traditionally assigned to self-esteem in the life of an individual cannot be denied (cf. Wylie's 1968 summary). However, the present orientation does suggest some modifications. It is assumed that the self-experiencing person will not simply react to himself impartially and in a neutral manner, but that he will come to evaluate himself as soon as the state of self-experiencing occurs (Duval & Wicklund, 1972, pp. 11-14). This assumption is predicated on the existence of a psychological system of standards that is possessed by each person:

A standard is defined as a mental representation of correct behavior, attitudes, and traits. To cite some examples, standards of correctness for social behavior would be such criteria of etiquette as the appropriate method of making introductions, suitable dinner table conversation, and protocol at a funeral. In the case of personality traits, each individual would have mental representations of ideal personality traits, such as intelligence, adaptiveness, and so on. In short, all of the standards of correctness taken

together define what a "correct" person should be (Duval & Wicklund, 1972, p. 4).

Thus, when a person focuses conscious attention on himself, it is assumed that there will be an automatic comparison of the person's self-conception with standards of correctness. If the comparison reveals a discrepancy between the person's self-conception and his standards of correctness, then a negative self-evaluation and negative effect will be experienced. Conversely, if the comparison does not reveal a discrepancy, then a positive self-evaluation and positive effect will be experienced.

The implications of this assumption are several. If one assumes that each self-conception has connotative as well as denotative meanings, then notions of basal levels of esteem become problematic. Even though it is possible to think of an average level of self-esteem, it is doubtful on a phenomenological basis that a person ever experiences such an average, or that such an average actually affects his behavior. Consequently, a particularistic approach that takes into account the evaluation associated with each self-experience seems necessary.

To summarize, a number of basic tenets of what may be termed an information-processing view of self have been developed. Essentially, this view is a modification of traditional theories of self, based on recent work in the areas of cognition and information-processing, which has pointed to and stressed the active and constructive nature of attentional, perceptual, and memory processes. In effect, then, the present section represents an attempt to bring traditional theories of self closer to the mainstream of present-day psychology. Table 1 summarizes this theoretical rapprochement.

Table 1

Summary of an Information-Processing View
of the Dominant Assumptions in Traditional Theories
of the Self

Traditional Assumption	Rapprochement with Information-Processing Psychology
Experience	From experience to the extraction and transformation of stimulus information
Self-experience	From self-experience to dimensions of cognition
Reflected appraisal	From reflected appraisal to the development of self-consciousness
Core-self	From the core-self to the self-schema
Basic esteem	From basic esteem to experiential specificity

Self-Awareness

Having used the framework of information-processing psychology to define "awareness" and modify a number of dominant assumptions in traditional theories of the "self", we can begin the critical task of synthesizing these conceptualizations, with the aim of identifying the observational operations required to measure "self-awareness" in the theory context.

Figure 2 schematically summarizes the relationships among the various concepts presented in the previous two sections. As indicated in Figure 2, the two postulated properties of experience - i.e., the focus and the degree of awareness - are seen to be interdependent. Consequently, four states of experiencing are identified in Figure 2: familiar self, emergent self, familiar nonself, and emergent nonself.

		<u>Focus of Experience</u>	
		Self	Nonself
<u>Degree of Awareness</u>	Emergent	Emergent self	Emergent nonself
	Familiar	Familiar self	Familiar nonself

Fig. 2. A schematization of the relationship between the two postulated properties of experience

From the logical standpoint, it is clear that two observational operations are required in order to measure self-awareness. First, a given experience must be assessed for its focus: is it a self or nonself experience? Second, if the experience is identified as a self experience, then it must be assessed for degree of awareness: is it a familiar

or emergent self experience?

The most appropriate methodological tactic for performing these observational operations in the therapy context (taking into account the technical considerations of validity, reliability, efficiency, as well as ethical considerations) appeared to be a content-analysis of the verbalized experiences of therapy participants:

Content analysis denotes a research technique for the systematic ordering of the content of communication processes. Typically, it involves procedures for division of content into units, for assignment of each unit to a category or to a position on a metric, and for summarizing or otherwise manipulating coded units to provide a basis for inference concerning their significance (Marsden, 1971, pp. 345-446).

Therefore, the investigator developed a content-analysis scoring system, based on the following set of propositions and corollaries.

Proposition 1. An individual may focus conscious attention on himself or on a feature of the external environment.

Corollary 1. Conscious attention cannot be focused simultaneously on an aspect of the person and on a feature of the environment.

Proposition 2. When an individual focuses conscious attention on himself he acts on and transforms information about his body, his social identity and/or his values and thus creates his own "self-experience".

Proposition 3. The cognitive operations that enable a person to be his own source for creating self-experience are the differentiation of meaning and its integration.

Corollary 2. Emergent self-awareness is a state of experiencing wherein the person increasingly and adequately differentiates and integrates meaning in information about himself and thus achieves reorganization and change in self-experience.

Corollary 3. Familiar self-awareness is a state of experiencing wherein the person inadequately differentiates and integrates meaning in information about himself and thus fails to create reorganization and change in self-experience.

Proposition 4. When an individual experiences himself he will automatically compare himself with his standards of correctness.

Corollary 4. If the person perceives a discrepancy between the self-referential meanings he experiences and his standards of correctness, then a negative self-evaluation and negative effect will result.

Corollary 5. If the person does not perceive a discrepancy between the self-referential meanings he experiences and his standards of correctness, then a positive self-evaluation and positive effect will result.

Summary

Thus far we have set forth a new, extended, modified and more specific conceptualization of self-awareness and have tied the concept to measuring operations in the psychotherapy context. It remains to examine self-observation techniques as they have been or could be used in effecting change in self-awareness. Such is the task of the next chapter.

CHAPTER III

VIDEOTAPE SELF-CONFRONTATION AS A THERAPY ADJUNCT: RATIONALE AND PROCEDURE

To a large extent the development of videotape self-confrontation techniques has taken place on an atheoretical basis. As Bailey and Sowder (1970) in their review of the research literature on videotape self-confrontation in psychotherapy put it: "The typical approach has been to use self-confrontation in sundry ways over a nonspecified period of time and then to render a subjective opinion as to the therapeutic consequences (p. 133)." Thus, clinicians and researchers alike have given little attention to: (a) the form, nature, and intensity of playback confrontations; (b) the role of organismic variables in clients confronted with their own previously recorded therapy behavior; and (c) the effects of self-confrontation methods on therapist behavior.

The aim of this chapter is to move toward bridging the present hiatus between theory and playback methodology. The first section of this chapter will develop a theoretical rationale which explains how and why playback confrontation presumably accelerates the development of "expanded" self-awareness in therapy participants. Using this rationale as a basis, the second section of the chapter will outline a procedure for obtaining and selecting content for playback confrontations.

Playback Rationale

The anchor points of the playback rationale developed for this study can be outlined in terms of three general assumptions: (a) clients are

deficient in the manner in which they differentiate and integrate meaning in information; (b) therapists help clients transcend their processing deficiencies by serving as surrogate information-processors; and (c) videotape playback is an information source that can be utilized to probe the manner in which clients process information about themselves.

The client as a deficient information-processor

This assumption was first posited by Wexler (1974) although it has been alluded to by several other authors (Kelley, 1955; Harvey, Hunt & Schroder, 1961; Witkin, 1965; Mischel, 1973). Wexler (1974) believes that individuals enter therapy because their characteristic style of processing is such that they do not adequately differentiate and integrate meaning for themselves. To elaborate, Wexler (1974, pp. 87-89) asserts that there are three ways in which clients are deficient in their processing. He terms these deficiencies "depressed", "rigid", and "disordered" modes of processing.

Depressed mode of processing. Clients with a depressed style of processing do little in the way of actively differentiating and integrating meaning in information; their approach to processing is fundamentally passive. Moreover, because the structures they generate to differentiate and integrate meaning in information are extremely general and vague, their processing evokes little internal output - i.e., kinesthetic stimuli and/or information from long-term store - for further differentiation. As Wexler (1974) puts it:

Such clients seem anergic and listless . . . because their processing style is extremely limited in the amount of information created to enter into reorganization . . . their processing generates little movement or change in experience and their field remains static and unchanging (p. 87).

Rigid mode of processing. This deficient processing style is active and energetic, in contrast to the depressed style; however, the activity and energy of such clients is not directed toward the differentiation and integration of new information. Rather, familiar information is vigorously extracted and used in habitual ways. In as much as these clients extract and use a restricted range of information, they too typically evoke little new information through their processing. Their processing is characterized by "tightness", to use Wexler's (1974) term, and an absence of affect. Although they may talk about feelings, their mode of processing does not generate affect (cf. Schacter & Singer, 1962; Schacter & Wheeler, 1962).

Disordered mode of processing. This mode of processing differs from the previous two in that these clients typically differentiate many new facets of meaning in information. Their deficiency lies with integration; that is, the amount of information in their experiential field is greater in amount and/or complexity than they are optimally able to integrate. According to Wexler (1974, p. 88), the verbalizations of such clients will frequently be disjointed, with the client moving from one facet of meaning to another in an attempt to elaborate facets that might permit integration. However, in jumping from one facet to another, characteristically they are never able to attend to the mass of facets as a whole and therefore are unable to synthesize a common meaning in the array and give order to their experiential field.

In sum, although the creation of new experience through increased differentiation and integration of meaning constitutes the ideal, rarely do clients seem to be able to do this for themselves. Indeed, that is

why they come to therapy. Thus, from the vantage point of the present assumption, the essence of successful therapy can be seen to involve a change in the characteristic style in which clients process information. Basically, we would view therapy as a learning situation; the aim of the therapist is to help the client engage in a more optimal mode of experiencing. Although the immediate consequence of engaging in such a mode in therapy will be that the client will experience reorganization and change with respect to his concerns, the more important consequence is that the client will learn a mode of processing he can engage in outside of the therapy hour. In short, therapy will be successful when the client learns he can be truly self-sufficient in creating reorganization and change for himself through his own cognitive functioning.

The therapist as a surrogate information-processor

This second assumption was also extracted from Wexler's (1974) work. The clear implication of this assumption is that the therapist works with the information the client is attempting to process but to the extent that the client's processing is less than optimal, the therapist "takes over" processing from the client and compensates when the client's processing might be deficient. In compensating when the client's processing might be deficient, the therapist serves three vitally important processing functions for the client: (a) an attentional function, (b) an organizing function, and (c) an evocative function (Wexler, 1974, pp. 95-110).

The attentional function. In order to understand how a therapist's response can serve an attentional function for the client, it is important to note that in the ongoing processing of information in the therapy hour,

information evoked at a given instant in time and held in short-term memory is often far greater than the client can meaningfully attend to and organize. The consequence is a selective allotment of attention. Two problems may arise from such selection. First, information that can most readily be organized with the client's existent rules may be attended to for further processing at the expense of richer information not so readily organized. Second, evoked information may momentarily be attended to and organized by the client but subsequently dropped as a substrate for further processing due to other information coming into short-term memory. Common to both cases is the fact that the client may leave important facets of information insufficiently processed.

Although the client's attention may be diverted to other information, the therapist's need not be. By focusing his response on the information the client's attention has been diverted from, the therapist can serve an important processing function by refocusing the client's attention, and hence his subsequent processing, on what would otherwise be lost. In information-processing terms, the therapist is basically serving a rehearsal function. Whereas without the therapist's response the information would become lost in short-term memory, being crowded out by other information, the therapist's response maintains the information in a high-priority position in short-term store so that it will be reattended to and processed further.

The organizing function. In their ongoing processing of information in the therapy hour, clients may be hindered or stopped in their processing because they are unable to generate an organization that either differentiates or integrates new facets of meaning in information.

Consequently, they lack an organized substrate from which they can go on to further differentiate and integrate meaning. In such a situation, some clients will keep trying to search for words to generate that organization, whereas other clients will give up and go on to something else.

Although the client's existent repertoire of rules may hinder or prevent him from generating an adequate organization for further processing, the therapist - because he is not bound by the organizing rules of the client - can provide this organization in the response he holds out to the client. The net effect of this organization (i.e., an empathic response) on the client is always increased differentiation and integration of meaning (cf. Carkhuff & Berenson, 1967) because it serves to provide an organized substrate from which the client can go on and distinguish and synthesize new facets of meaning.

The evocative function. Clients, in their ongoing processing of information in the therapy hour, internally evoke information from long-term memory (such as memories of past experiences) and/or kinesthetic information (such as arousal or a parched throat). Whatever the particular information evoked, it is fed back into short-term memory, where it is held until it is organized into a subsequent meaning structure or lost for further processing. It is this range of evoked information that provides the client with a substrate for further processing, and it is from the information evoked by his meaning structures that the client can bring new information into his field by attending to it and organizing its meaning in his subsequent processing. The fate of information evoked internally, however, is uncertain. Many clients

are oriented to allocating their attention and processing capacities to information derived from external sources rather than to information evoked internally. Such clients typically will not fully attend to evoked information and hence will not use it as a substrate for further processing. Moreover, the full allocation of the client's attention and processing capacities to the information evoked internally does not guarantee in and of itself an optimal use of the information as a substrate for further processing. Frequently, the range of information evoked internally is far richer than can be processed within the limits of processing capacity. The client, then, must selectively attend to some of the information for further processing and organizing in a subsequent meaning structure, and other information will inevitably be lost in short-term memory. Usually, what the client selectively attends to will be what his repertoire of rules allows him to process and organize most readily. With such selection, however, comes the possibility that the information not attended to and lost might have provided the potential informational substrate for subsequent change and reorganization in the field.

In serving an evocative function for the client, the therapist accentuates evoked information. He may do this in a number of ways. For example, the therapist can instruct the client to report any physical sensations or thoughts that arise in the therapeutic hour (cf. Fromm-Reichman, 1950). Additionally, the therapist might call attention to the nonverbal components of the client's behavior, thereby facilitating differentiation of information evoked but not verbalized. Similarly, if the client is talking about experience in the past, the therapist's

response can serve to evoke other important facets of the experience that may be in the client's long-term store but not activated by the client's processing. Finally, if the client is verbalizing some facet of his current experience, the therapist's response can function to evoke an enriched substrate for further processing if the words the therapist uses are sharp and poignant and rich in terms of connotations they evoke (note: therapist's responses that use general and inexpressive language may be reasonably empathic but they will be minimally evocative).

To summarize, the foregoing conceptualization of the therapist as a surrogate information-processor suggests that the relationship between the quality of client processing and the degree of therapist participation can be stated as an inverse function: if therapeutic process is to take place, the degree to which the therapist must be active will be inversely related to the quality of the client's processing. Thus, the less productively the client is differentiating and integrating meaning in information, the more active the therapist will have to be in serving attentional, organizing and evocative functions for the client.

Videotape playback as an information source

The assumption that videotape playback is an information source maintains that by increasing the range of stimulus information the client has about himself (through videotape replays) and by introducing techniques for highlighting different aspects of that information, the therapist can accelerate a change in the characteristic way in which the client processes information about himself. Specifically, the client will spend a decreasing portion of the therapy hour in familiar self-experiencing and an increasing portion of the therapy hour in emergent

self-experiencing. Put in other terms, the client's awareness of himself will "expand".

The techniques for highlighting the different aspects of the audio-visual playback are as follows. The client is asked to: (a) observe replays of his previously recorded therapy behavior, and (b) respond to questions from the therapist concerning his self-observation. As the therapist listens to the client's answers to his questions, he determines how the client's processing is deficient. His manner of responding is then geared to helping the client transcend deficiencies in the style in which he characteristically elaborates and organizes information so that he can engage in a more productive mode of self-experiencing in the therapy hour.

The foregoing question-answer format was formulated on the basis of research in the area of educational television (cf. Alkire, 1969). This research indicates that if the viewer (i.e., the client) is to extract and use the information disseminated via television, he must actively search for, specify, and classify the information rather than simply passively looking and listening. Thus, the client is required to analyze (i.e., break the information transmitted into its constituent parts and detect the relationship of the parts (cf. Bloom, 1956, p. 144) - or evaluate (i.e., make quantitative or qualitative judgments (cf. Bloom, 1956, p. 185) - his televised behavior. For example, in the first instance the client might be asked to describe those aspects of his televised behavior that demonstrate a certain concept. In the second instance the client might be asked to judge the congruence between his verbal and nonverbal communication.

To summarize, the videotape as an information source assumption emphasizes that television playback is simply a medium for transmitting "bits" of factual information about a therapy participant to a therapy participant. The behavioral impact of these "bits" of information depends on how they are processed by the client. As Alger and Hogan (1967) so aptly put it:

In itself, it (playback) is not a method of therapy, but takes on value as it is used as an important way to make implementation of any particular therapeutic approach more effective. Its basic operation is to allow the recovery and review of a large amount of objective data concerning the interactions taking place during a therapy session (pp. 167-168).

Procedure for Obtaining and Selecting Playback Content

A review of the articles dealing with various techniques of confronting psychotherapy clientele with their own previously recorded therapy behavior (cf. Berger, 1970, pp. 259-267 for a bibliography of these articles) revealed that most clinicians use the "shotgun approach"; that is, they merely show randomly selected scenes of their patient's behavior on videotape. The distressing implication of this fact is that clinicians using the technique would seem to take positive therapeutic effects for granted. Thus, before testing of the self-confrontation hypothesis could be attempted, it was necessary for the investigator to develop a procedure for obtaining and selecting playback content.

The procedure developed for this study involved two steps:

- (1) conducting and videotaping "pre-playback" therapy sessions, and
- (2) selecting videotape excerpts for playback.

Conducting and videorecording "pre-playback" therapy sessions

Conducting and videorecording "pre-playback" therapy sessions was deemed important for three reasons. First, and perhaps most important, these "pre-playback" therapy sessions would provide the therapist with an opportunity to assess the client's self-conception and processing style. This assessment would then serve as the basis for selecting the content of the videotape self-confrontations. Second, these sessions would enable the client and therapist to establish a therapeutic relationship prior to playback, thereby increasing the probability that the information transmitted by the therapist at the time of playback would be "received": "Under most circumstances, information transmitted by another person is more likely to be perceived and used if the information source is seen as unbiased, truthful, and neutral (Kaswan, Love & Rodnick, 1971, p. 154)." Third, exposing the client to the videorecording equipment and personnel prior to playback would decrease the probability of these factors interfering with the client's attentiveness during playback (cf. Berger, 1970, pp. 121-125 for a description of clients' reactions to videorecording equipment and personnel).

The procedure and equipment for videorecording the "pre-playback" therapy sessions will not be described here. Instead, the reader is referred to an excellent article by Wilmer (1967) on the technical and artistic aspects of videorecording therapy sessions.

Selecting videotape excerpts for playback

Videorecording the "pre-playback" therapy sessions would provide the therapist with an extremely large data pool on the client. If necessary, the therapist could use this data pool to complete his

assessment of the client. However, insofar as selecting excerpts for playback was concerned, the videorecording of the therapy session immediately preceding the playback therapy session was to be used as the playback content "source" tape (because of the "recency" of the videorecording, it was assumed that the client would remember the context in which the behavior occurred and thus could devote his attentive and processing capacities to analyzing and judging the replay rather than attempting to "contextualize" it).

The following guidelines were developed to assist the therapists in their selection of playback content:

1. Limited processing capacity. Individuals can process only a very limited amount of the information that impinges on them at a given time (Miller, 1956; Garner, 1962, p. 63); therefore, the videotape playbacks should be brief. Wilmer (1967) specifically recommends that playbacks not exceed five minutes, noting that patients tend to be "overwhelmed (p. 215)" with playbacks in excess of ten minutes.
2. Congruence of information. The impact of the playback information will partly depend on its congruence with information the client already has. In short, playback information is likely to be accepted and used to the extent that it is congruent, or can be made congruent, with existing information (cf. Heider, 1958; Osgood & Tannenbaum, 1955). It is useful, however, to distinguish between positive and negative congruent information. People tend to resist negative information about themselves or their beliefs if it is excessive. On the other hand, if the incongruous information is not excessively negative - i.e., is surprising -

the probability of discrimination and behavior change may increase (Kaswan, Love & Rodnick, 1971). Additionally, as Festinger (1957) has noted, the general effect of incongruous information is to induce a state of dissonance which motivates the individual to reduce the dissonance, either by changing his attitude or discounting the dissonant information. Thus, while much of the information presented in the playback should be novel and surprising, and therefore a source of dissonance, it should not be negative and painful.

3. Current self-conception. The therapist should select a series of behavioral events that can serve both to establish new conceptions of self and to invalidate any debilitating concept of self that a patient might have. For example, a particular patient may view himself as generally weak. Such a conception might be felt by the therapist not to correspond with actual fact. In such a case, recorded events that express "strength" (as defined by the patient) could be drawn together. Exposure to them should serve to reduce the saliency of the concept of self as weak and lay the foundation for belief in its opposite.

4. New discriminations. In general, new discriminations will be facilitated if stimulus variables are distinctive, compel attention, and directly reflect concrete stimulus characteristics (e.g., Dember, 1960, pp. 145-195; Tighe & Tighe, 1966). Thus, it is suggested that a variety of client behaviors be selected and edited into one meaningful playback segment. Moreover, it is suggested that these behaviors be "captured" using a variety of camera angles (e.g., various zoom close-ups, wide angle shots, full-face close-ups) thereby providing a perspective that

is not usually available or salient to the client.

Focus of the Study

Few modes of psychological treatment have risen to such heights of enthusiastic acceptance among small, independent groups of clinicians as has the technique of therapeutic self-confrontation (Bailey & Sowder, 1970). Exemplary of the kinds of statements which have been voiced about these methods is that of Alger and Hogan (1966) who assert: "It may be no exaggeration to say that videotape recording represents a technological breakthrough with the kind of significance for psychiatry that the microscope has had for biology (p. 1)." Whether this statement and many others like it reflects a realistic and accurate assessment of the true merits of therapeutic self-confrontation is the major concern of this study. Essentially, the study explores two basic areas: (a) whether videotape playback of therapy behavior influences the extent to which therapy participants are aware of themselves, and (b) whether videotape playback influences the self-esteem of therapy participants.

CHAPTER IV

METHOD

Research Design

The present study was conducted using a time-lagged multiple time-series design (see Figure 3). This experimental design (Gottman, McFall & Barnett, 1969; Glass, Willson & Gottman, 1975) was chosen because it afforded a unique perspective on the immediacy, duration, and changing character of the intervention effects, as well as providing information on whether the intervention effects were tied to a specific time.

Subjects

Selection procedure. Sixteen outpatients attending the Psychiatric Day Hospital at the University of Alberta Hospital were chosen by the members of the Day Hospital Treatment Team as possible subjects for this study. The primary criteria for selection of these patients were:

- (a) that they were in remission from major psychotic symptoms, and
- (b) that they would be available (i.e., not discharged) for the duration of the investigation.

Subsequent to this selection procedure, each of the identified subjects was interviewed by a member of the Treatment Team to determine if they would be willing to participate in one of the experimental treatment groups. All of the patients consented to participate. (It is important to note that group therapy utilizing videotape self-confrontation as a therapy adjunct was one of the many therapy modalities offered at the Day Hospital; hence participation in the experimental treatment groups required nothing 'unusual' of the patients.) The age,

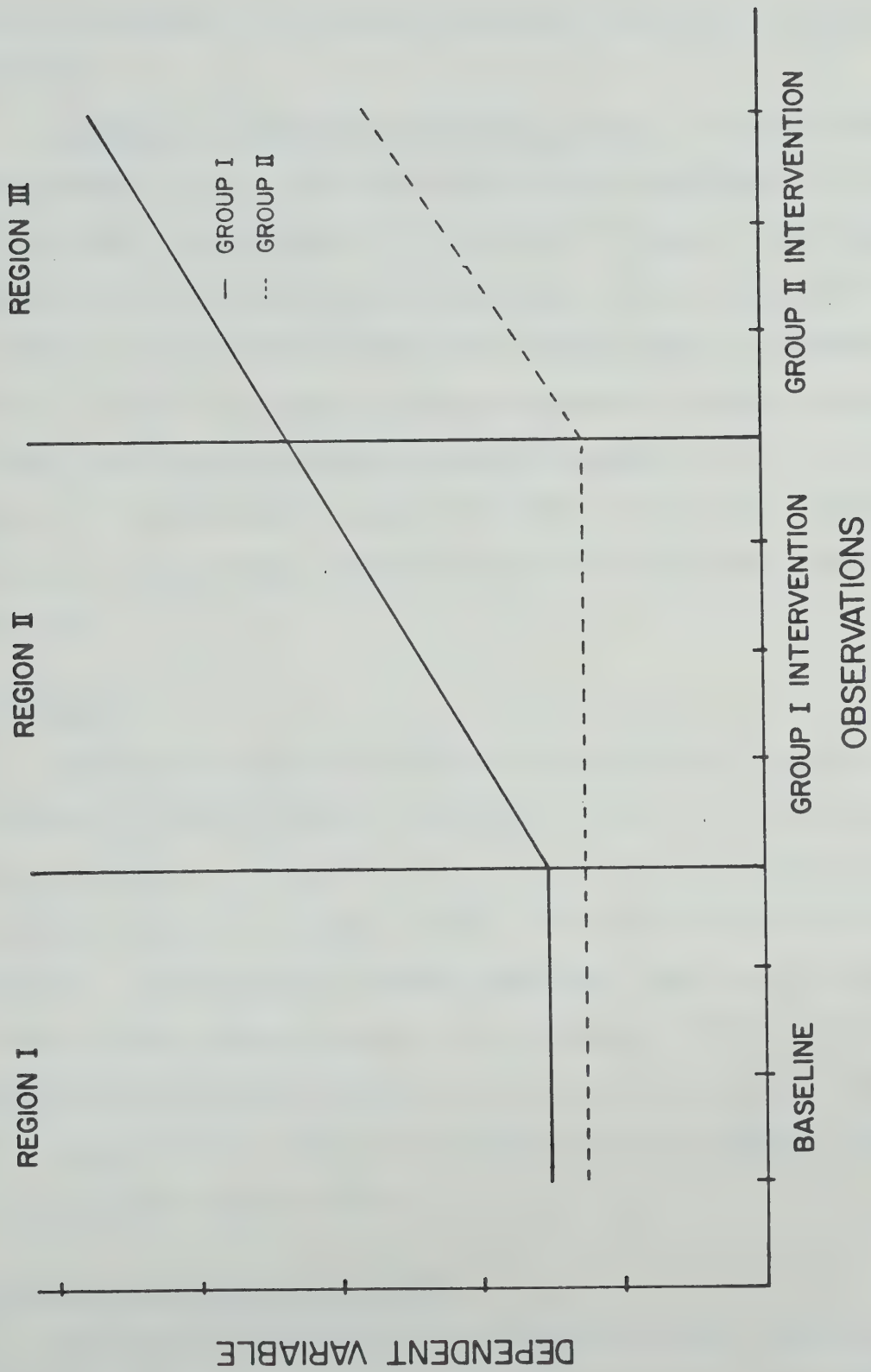


Fig. 3. A time-lagged multiple time series

sex and diagnosis of the sixteen experimental subjects is presented in Table 2.

Assignment to experimental treatment groups. The sixteen subjects were assigned to one of the following treatment conditions on the basis of their age, sex and degree of talkativeness: Group I (eight experimental subjects participating in 18 televised group therapy sessions and receiving videotape replays of the previous day's therapy behavior in sessions 7, 8, 9, 10, 11 and 12) and Group II (eight experimental subjects treated like Group I but receiving videotape replays in sessions 13, 14, 15, 16, 17 and 18). The first eight subjects described in Table 2 were assigned to Group I. The last eight subjects described in Table 2 were assigned to Group II.

Therapists

Two experienced therapists from the Psychiatric Day Hospital at the University of Alberta Hospital volunteered to serve as co-therapists for this investigation. Therapist A was a male social worker who had utilized videotape replays as a therapy adjunct with numerous groups of Day Hospital patients. Therapist B was a female psychiatric nurse who had frequently conducted group therapy sessions with Therapist A. Prior to this investigation, however, Therapist B had not utilized videotape replays as a therapy adjunct. All of the therapy sessions for Group I and Group II were co-led by these therapists.

Facilities, equipment and personnel

Facilities. All of the group therapy sessions were conducted in a television studio located in the Department of Radio and Television at the

Table 2

Age, Sex and Diagnosis of the Sixteen Psychiatric Outpatients
Who Served as Experimental Subjects

Patient	Age	Sex	Diagnosis
1	29	female	Borderline retardation, hysterical personality
2	28	male	Alcoholism, depressive neurosis
3	30	female	Depressive neurosis
4	30	female	Depressive neurosis, marital maladjustment
5	19	male	Schizophrenia (schizo-affective type)
6	29	male	Depressive neurosis, passive dependent personality
7	38	male	Habitual excessive drinking, inadequate personality
8	16	female	Adjustment reaction of adolescence
9	33	male	Depression, inadequate personality
10	41	male	Manic depressive (circular type), depression, habitual excessive drinking
11	21	female	Immature personality
12	40	female	Depressive neurosis
13	18	male	Adjustment reaction of adolescence
14	16	male	Adjustment reaction of adolescence
15	21	female	Drug dependence, personality disorder
16	27	male	Schizophrenia (chronic undifferentiated type)

University of Alberta. A control room, located next to the television studio, contained the control, adjustment and monitoring equipment for the studio. A large glass window separated the control room outside of the studio.

Recording equipment. All of the therapy sessions, including the playback sessions, were videorecorded using broadcast quality recording equipment. Sound recording was achieved with an Electronic 666 boom microphone. The videorecording equipment included two mobile, black and white General Electric television-studio cameras and two Panasonic 1/2-inch reel-to-reel videorecorders. Recordings were made on 60-minute Sony polyester videotapes.

Recording personnel. Two cameramen, a videoshader, an audio operator and a switcher from the Department of Radio and Television at the University of Alberta collaborated with the investigator (who served as director) to produce sophisticated videotape recordings of each therapy session.

Procedure

Therapy sessions. Therapy sessions for Groups I and II were scheduled every day (excluding weekends) from May 20 to June 21, 1974. Thus, Groups I and II met on the same days for their sessions but at different times: Group I met between 10:45 a.m. and 12:15 p.m., while Group II met between 1:30 p.m. and 3:30 p.m. Each group received 18 therapy sessions, each of 1 1/2 hours duration. It is important to note at this point that the number of therapy sessions was established after considering the number of time points required to identify the indices (p, d, q) of an Auto-Regressive-Integrated-Moving-Average (ARIMA) model - i.e., the general model used to estimate and test the intervention effects in this study.

In the Box-Jenkins system of Autoregressive Integrated Moving Averages (ARIMA) models, an observed time-series is regarded as having three basic properties: 1) the observed series is stationary or nonstationary, and if the latter, there exists a degree of "differencing" of the series required to produce stationarity (i.e., d); 2) the order of the autoregressive component of the model (i.e., p); 3) the order of the moving average component of the model (i.e., q) (Glass, Willson & Gottman, 1975, p. 78).

According to Glass, Willson and Gottman (1975, p. 112), it is quite difficult to identify the indices (p, d, q) of an ARIMA model when fewer than 35 time point observations are available. Hence, we set the sample size (with respect to time points) at 30, 30, 30 in Group I and 60, 30 in Group II. That is, we arbitrarily divided each therapy session into five 18-minute segments, thus yielding 30 observations before, during and after VTR in Group I and 60 observations before and 30 observations during VTR in Group II. The length of the therapy sessions was established after considering the amount of time required to present and adequately process eight four-minute playbacks.

The therapy sessions were conducted with the patients seated in comfortable armchairs arranged in a "U". The therapists were seated at the tips of the "U", with a large studio playback monitor stationed between them. All of the sessions were conducted in the presence of two cameramen, operating mobile broadcast cameras, stationed outside the "U".

Playback sessions. As was indicated earlier, the patients in Group I received videotape replays of their previous day's therapy behavior in sessions 7, 8, 9, 10, 11 and 12, while the patients in Group II received videotape replays of their previous day's therapy behavior in sessions 13, 14, 15, 16, 17 and 18. The first 64 minutes of the six playback sessions for each group were structured as follows: each of the eight patients in

the group received a four-minute videotape replay of his or her previous day's therapy behavior on the playback monitor and then engaged in a four-minute question-answer "processing" of his or her self-observation with the therapists (e.g., four minutes of playback, four minutes of processing, four minutes of playback, four minutes of processing, repeated eight times). The final 26 minutes of the playback session was structured to allow the patients an opportunity to "freely discuss what they had seen on TV".

The order of the playback presentations varied from session to session. The therapists determined which subject was to be confronted first, second, third, etc., after selecting the playback content with the investigator. The therapists based their 'ordering' of the playbacks on a consideration of each patient's ego strength, manifest anxiety and reaction to previous playbacks. Appendix A contains a table outlining the order of the playback presentations for the patients in Groups I and II.

Selection and preparation of playback segments. The four-minute playback segments were prepared by editing together a number of behavioral excerpts from the videorecording of the previous day's therapy session. The behavioral excerpts included in each playback segments were selected by the two therapists and the investigator. We would view the videotape that was to be used as the 'source' of the playback segments and after much discussion and numerous replays of the 'source' tape, would agree upon which excerpts to include in each patient's playback segment. (Note: the principles outlined in step 2 of the playback procedure served to guide us in our selection of these excerpts.) Once the playback excerpts were identified, the therapists would determine the order of the playback presentations.

Subsequent to this selection and ordering procedure, I would meet with a technician from the Department of Radio and Television at the University of Alberta to edit the selected excerpts into eight separate four-minute playback segments. In editing the selected excerpts from the 'source' tape onto the 'playback' tape, we used five-second blackouts to separate the excerpts contained in each four-minute playback segment. The completed 'playback' tape contained a four-minute playback segment followed by a four-minute blackout repeated eight times. This tape was then played during the first 64 minutes of the appropriate playback therapy session. (Note: the automatic presentation of each playback segment served to terminate the four-minute processing of the preceding person's playback.)

Collection and Scoring of Data

Collection of data

All of the therapy sessions for Groups I and II were taperecorded. These audiotapes were later transcribed, yielding a word-for-word typescript of each therapy session. Following this transcribing procedure, the names contained in the typescripts were blacked out and replaced with code numbers. The typescripts were then key-punched on IBM computer cards. The IBM cards for each therapy session were sent through the computer with a program designed to sort the cards and produce printouts containing the verbal behavior of each subject ordered from the first to last speech for each subject. We shall refer to these one-subject, one-session printouts as performances. Additionally, we shall refer to all of the performances for a given subject as that subject's career. The 16 careers thus derived

comprised the raw data for this study.

The self-awareness scoring system

The self-awareness scoring system developed by the investigator (see Appendix B) was used to score the careers of the 16 subjects in this study. In order to achieve parsimony and clarity in the description of how the raters were trained, how inter-rater reliability was measured and how the careers were scored, an overview of the scoring system is herewith presented.

Scoring units and the unit of analysis. Other scoring systems, notably that of Bales (1950), tend to use the simple sentence as the scoring unit (i.e., the "act"). In contrast, the self-awareness scoring system requires a more global approach. We are attempting to capture the directional nature of conscious experiencing and for this reason we distinguish between "self acts", "nonself acts" and "incomplete acts". A self act is defined as that part of a speech (i.e., a single sentence, a part of a sentence or a burst of sentences) within which the subject's attention is directed toward a consideration of himself, viz. the dimensions of bodily awareness, social identity and/or values. In contrast, a nonself act is defined as that part of a speech (i.e., a single sentence, a part of a sentence or a burst of sentences) within which the subject's attention is directed away from himself. If the subject fails to complete a sentence - either because he voluntarily stops talking or is interrupted - then that incomplete sentence is defined as an incomplete act. Thus, in order to identify the "unit of analysis" - i.e., the self act - the scorer must read each speech emitted by the subject and identify the number and type of acts contained in each speech. Once the various acts

are identified, the scorer then disregards the incomplete and nonsensical acts and proceeds to assess each self act for (a) degree of awareness and (b) type of esteem.

Awareness categories. The scoring system contains three awareness categories: emergent awareness, familiar awareness and denied awareness. Scoring a self act in the emergent or familiar awareness categories is based upon a decision regarding the subject's use of the operations of differentiation and/or integration; that is, on the basis of the relational properties of the concepts expressed in the self act. A self act is scored as emergent awareness if it represents increased and adequate differentiation and/or integration of meaning. Put in simpler terms, the subject gives evidence of developing, replacing, or modifying his experience of himself. For example, if the subject said:

I think I was hard . . . hard. Harder than I really had to be. I don't know . . . ah . . . I guess I feel soft and loving at times with my husband and the children . . . I can love . . . them . . . but I am not loving. I mean I never show it.

this self act would be scored as emergent awareness because the subject is distinguishing and elaborating more particular aspects of herself and in the process, creating new self-experience. If, in contrast, the subject gives no evidence of distinguishing or synthesizing new facets of meaning about himself, then that self act would be scored as familiar awareness.

For example, if the subject had said:

Well, I used to drink lots but I've really slowed down. Like for instance, yesterday I never had nothin'. Sunday, I just had one mouthful. Monday, I just had a couple of shots. And that's slow for me. Friday I think I had a couple of shots.

this self act would be scored as familiar awareness because the subject gives no evidence of developing, modifying or replacing his experience

of himself. If the subject denies the facts of his experience - i.e., states he thinks and feels nothing - then that self act is scored as denied awareness. For example, if the subject said: "I hadn't expected anything . . . ah . . . but ah . . . Well, I didn't feel anything. I personally didn't get anything out of the session.", this self act would be scored as denied awareness.

Esteem categories. Each self act emitted by the subject is also scored in one of three esteem categories: positive esteem, negative esteem, and "neutral" - i.e., unscorable. Scoring of self acts in one of the esteem categories is based on a "representational" rather than "instrumental" appraisal of the subject's words (cf. Trends in content analysis, edited by I. Pool, 1959, pp. 206-212). To elaborate, the words contained in the subject's self act are considered to have indictatorial validity; that is, the scorer is required to take the subject's message at "face value" rather than attempting to interpret the underlying meaning of the subject's message. (Note: it is recognized that every verbalization has both representational and instrumental aspects; however, pilot studies with the scoring system revealed that inter-judge agreement viz. the esteem categories tended to be less than 40% when the scorers were required to consider the underlying meaning of the subject's self act. Hence, the present scoring system simply requires a representational appraisal of the subject's words.) If the content of the self act reflected one of five definitions (see Appendix B), then the act was scored as reflecting positive esteem. If the content of the self act reflected one of five opposite definitions (see Appendix B), then the act was scored as reflecting negative esteem. If none of the definitions

applied to the content of the self act (i.e., the nature of the subject's self-evaluation had to be interpreted), the act was scored as reflecting neutral esteem. Two examples of positive esteem are as follows:

In the beginning I felt that I probably wasn't doing much for this group or I wasn't getting much out of it, you know . . . (pause) . . . and then I suppose I was a little bit afraid of a few things that were happening within me. But lately, just lately, I feel like I am a full-fledged member of this group. I can give and take without rescuing or being rescued.

Ah, I am sort of pleased about being able to let Tom know I was angry without tearing him apart . . . or pushing him away.

Two examples of negative esteem are as follows:

I feel as if I am not doing what I am supposed to be doing here.

I don't know why, but I have always been afraid of talking with people. Am I . . . ah, I say the wrong thing . . . I am not sure of myself. I lack self-confidence. If somebody were to ask me, "What's two and two?", I'd probably say six.

Two examples of neutral esteem are as follows:

I am not trying to be facetious about it, you know. I am not.

I think my reaction of embarrassment, etc., etc., is something which is normal, ah, which happens under many circumstances.

Summary of scoring system. Table 3 summarizes the self-awareness scoring system categories. As can be seen in Table 3, the sum of the self, nonself and incomplete acts in a given session (i.e., all the scoring system categories) comprises a subject's performance for that session. Moreover, the self acts contained in each performance can be summed across various categories to indicate the subject's level of awareness (i.e., familiar, emergent and denied awareness) and self-esteem (i.e., positive, negative and neutral) for that session.

Table 3
Self-Awareness Scoring System Categories

Category	Type of Act	Type of Awareness	Type of Esteem
1	Self	Emergent	Positive
2	Self	Emergent	Negative
3	Self	Emergent	Neutral
4	Self	Familiar	Positive
5	Self	Familiar	Negative
6	Self	Familiar	Neutral
7	Self	Denied	Neutral
8	Nonself	-	-
9	Incomplete	-	-

Developing inter-rater reliability

The investigator and two paid Education undergraduates served as raters for this study. We spent about 50 hours training for reliability, using speeches obtained from audiotapes of other therapy sessions. Training proceeded as follows: (1) identifying acts contained in speeches, (2) scoring self acts using the awareness categories, and (3) scoring self acts using the esteem definitions. An inter-rater reliability of 75% was required before proceeding to the subsequent training step. As was mentioned earlier, considerable difficulty was encountered while training for reliability in the use of the esteem categories. As a consequence, the original esteem categories were revised and a "representational" scoring rule was established. Subsequently, an inter-rater reliability of 75% was achieved in the use of the esteem categories. Upon attaining competency in the use of the scoring system, we commenced scoring the careers of the 16 subjects in this study.

Scoring the sixteen careers

The careers of the 16 subjects in this study were scored as follows: the investigator scored Subjects 1, 2, 3, 6, 8, 9 and 10; rater A scored Subjects 1, 4, 5, 11, 12 and 13; and rater B scored Subjects 1, 7, 14, 15 and 16. The careers were divided in such a way that we each did an equivalent amount of scoring. The investigator scored more subjects than rater B, for example, but this was simply because the investigator's subjects verbalized "less" than rater B's. Scoring took approximately three months, during which time the raters met weekly to discuss the system and obtain inter-rater reliability checks.

Inter-rater reliability

Inter-rater reliability was calculated on all of the speeches emitted by Subject 1 across each of the 18 therapy sessions. Hence it was possible to test the stability of rater accuracy across a single subject. In addition, inter-scorer agreement was calculated on ten speeches that were randomly selected from the careers of each of the remaining 15 subjects in the study.

Relatively high agreement was reached on the number and type of acts contained in each speech: agreement on the scoring of acts emitted by Subject 1 ranged from between 72 and 92%, whereas agreement on the scoring of acts contained in the 150 randomly selected speeches ranged from between 84 and 97%. Relatively high agreement was also reached on the degree of awareness reflected in each self act: agreement on the scoring of the awareness reflected in the self acts emitted by Subject 1 ranged from between 81 and 99%, whereas agreement on the scoring of awareness reflected in the self acts contained in the 150 randomly selected speeches ranged from between 93 and 98%. Agreement on the esteem categories was somewhat lower: agreement on the scoring of the type of esteem reflected in the self acts emitted by Subject 1 ranged from between 73 and 81%, whereas agreement on the scoring of the type of esteem reflected in the self acts contained in the 150 randomly selected speeches ranged from between 74 and 88%.

For a detailed account of these reliability scores see the tables in Appendix C.

Preparation of Data

The data derived from scoring the verbal behavior of the 16 subjects across 18 therapy sessions according to the self-awareness scoring system were prepared for analysis as follows. Everything each subject said in the first 18 minutes of the first therapy session was separated from what the subject said in the second 18 minutes of the first therapy session, and so on through all of the therapy sessions. Thus, the number of observation points for each subject was increased from 18 1 1/2-hour-long observation segments to 90 18-minute observation segments. Increasing the number of observation points in this manner was in accord with a suggestion by Glass, Willson and Gottman (1975):

Large sample size (with respect to time points) is required for knowledge of p, d and q so that the dependence among observations can be properly accounted for in statistical tests of intervention effects (p. 112).

These time segmented data were then transcribed on computer sheets and key-punched. A computer program was used to summarize the data for each subject in each group in a statistically useful way. An outline of its contents follows:

1. Frequency tables of acts by each person according to category number for each 18-minute time segment across 18 therapy sessions.

2. Tables of the sums of frequencies of acts by each person, according to category number for each 18-minute time segment across 18 therapy sessions to yield the following nine variables:

1. Self acts (i.e., the sum of frequencies in categories 1-7)
2. Nonself acts (i.e., the sum of frequencies in category 8)

3. Incomplete acts (i.e., the sum of frequencies in category 9)
4. Familiar awareness self acts (i.e., the sum of the frequencies in categories 4, 5 and 6)
5. Emergent awareness self acts (i.e., the sum of the frequencies in categories 1, 2 and 3)
6. Denied awareness self acts (i.e., the sum of the frequencies in category 7)
7. Positive esteem self acts (i.e., the sum of the frequencies in categories 1 and 4)
8. Negative esteem self acts (i.e., the sum of the frequencies in categories 2 and 5)
9. Neutral esteem self acts (i.e., the sum of the frequencies in categories 3, 6 and 7)

3. Tables of prorated variables for each person for each 18-minute time segment across the non-VTR therapy sessions. (Note: each VTR therapy session comprised 32 minutes of videotape replay and 58 minutes of "talking" time, whereas each non-VTR therapy session comprised 90 minutes of "talking" time. Prorating the non-VTR session variables down using the formula $\frac{\# \text{ acts}}{90} = \frac{x}{58}$ made the sessions equivalent with respect to talking time.)

4. Tables of the means of each prorated variable for Groups I and II for each 18-minute time segment across 18 therapy sessions.

Operationalization of Research Questions

It was expected that the introduction of videotape playbacks would work the following combination of effects on the observed time-series:

1. the number of self acts would significantly increase;
2. the number of nonself acts would significantly decrease;
3. the number of self acts scored as emergent awareness would significantly increase;
4. the number of self acts scored as familiar awareness would significantly decrease;
5. the number of self acts scored as positive esteem would significantly increase;
6. the number of self acts scored as negative esteem would significantly decrease.

CHAPTER V

RESULTS

Group Data

Self, nonself and incomplete acts: Dependent variables 1, 2 and 3

The published reports of therapists who have used playback treatment methods are replete with personal testimonials to the effect that playback (VTR) greatly increases the extent to which therapy participants focus conscious attention on themselves. Thus, it was expected that the introduction of VTR would (a) significantly increase the number of self acts and (b) significantly decrease the number of nonself acts emitted by the experimental subjects.

Figures 4 and 5 present line graphs of the mean number of self, nonself and incomplete acts emitted by the subjects in Groups I and II during the 90 18-minute observation periods of this experiment. Visual examination of the self and nonself time-series depicted in Figures 4 and 5 reveals that these time-series were relatively unaffected by the introduction of VTR. Apparently, VTR did not increase the extent to which the experimental subjects focused conscious attention on themselves. Visual examination of the incomplete time-series, however, reveals that the introduction of VTR increased the variance of this series, possibly suggesting that the experimental subjects experienced a marked and continued self-image reaction.

Statistical analyses of the self act time-series in Groups I and II were conducted, using ARIMA models to estimate and test for intervention effects (see Appendix D for the relevant portions of these analyses).

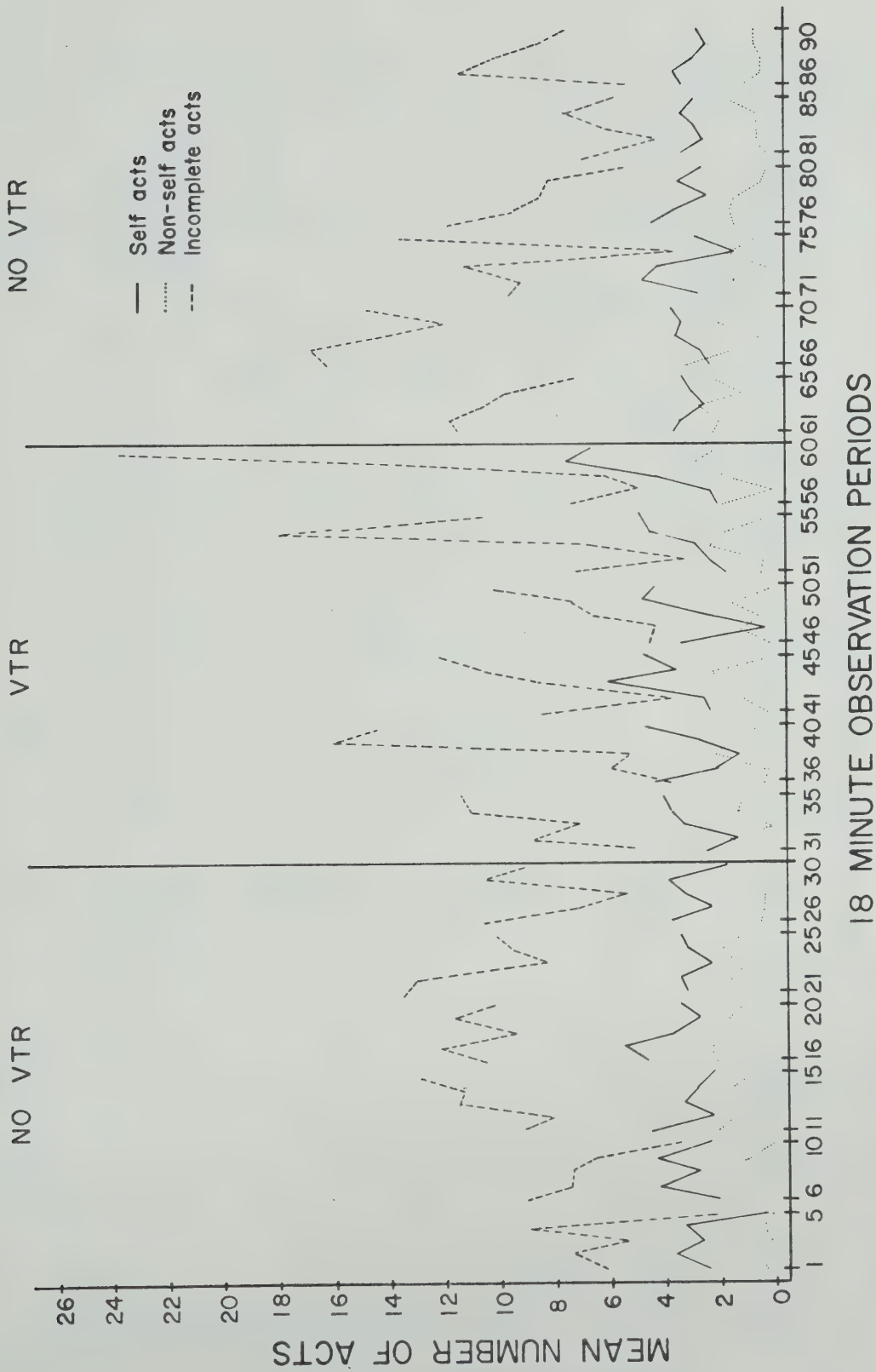
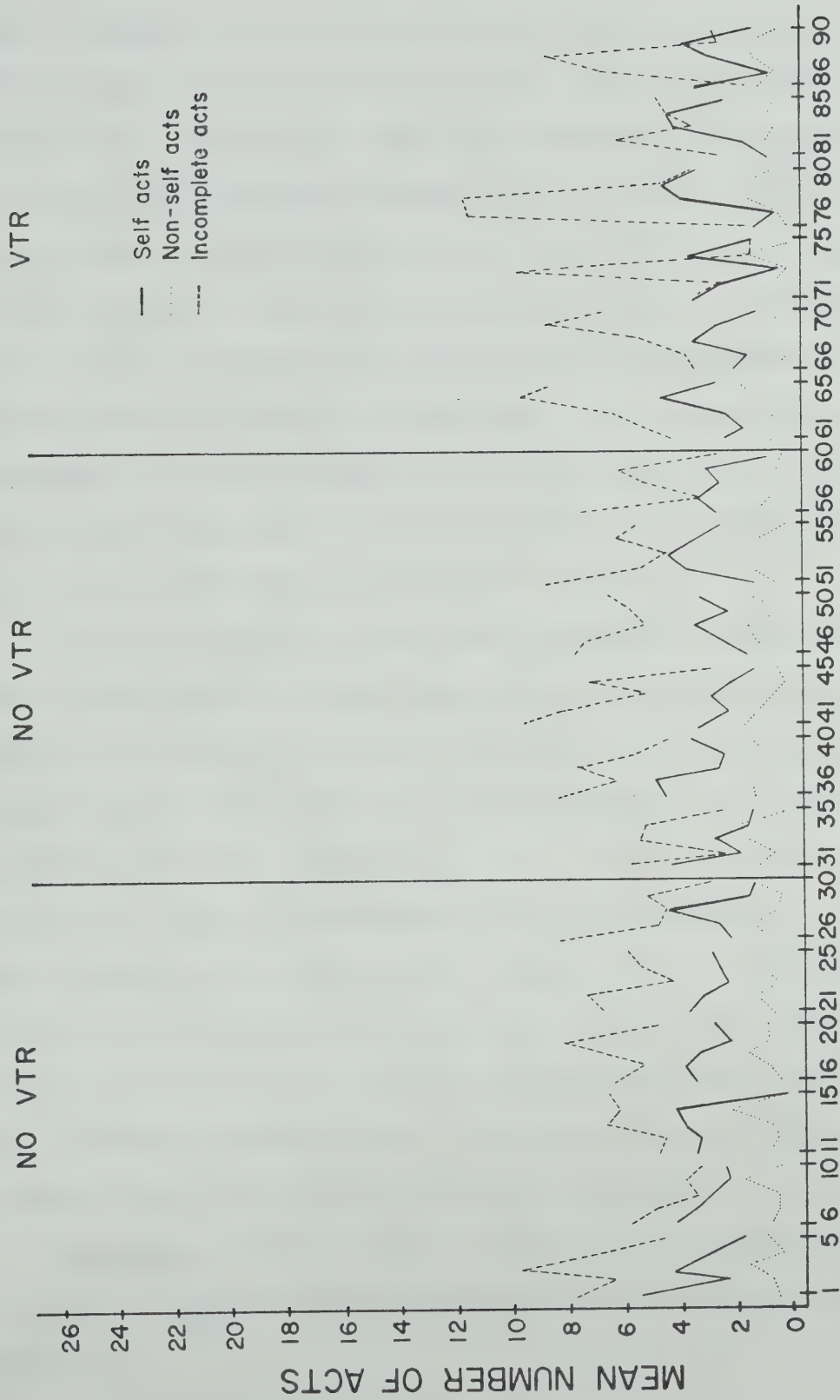


Fig. 4. Mean number of self, nonself and incomplete acts emitted by the subjects in Group I per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)



18 MINUTE OBSERVATION PERIODS

Fig. 5. Mean number of self, nonself and incomplete acts emitted by the subjects in Group II per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

Table 4 summarizes the results of these analyses. As expected, the ARIMA analyses statistically supported the visual finding that the introduction of VTR did not alter the progression of the self acts series in either of the experimental groups. The withdrawal of VTR, however, brought about a statistically downward shift in the level of self act series in Group I. Hence, the removal rather than the introduction of VTR appeared to influence the extent to which the experimental subjects focused conscious attention on themselves. Unfortunately, the multiple time-lagged time series design did not require that post-VTR data be collected on the subjects in Group II; hence, it was unknown whether this finding would have been replicated in Group II.

In considering the foregoing data, it seemed the proportionalizing the self and nonself variables might yield a more accurate and different view of VTR intervention effects. Therefore, the prorated self and nonself data for each subject was proportionalized (i.e., variable 1 was divided by the sum of variables 1, 2 and 3 for each 18-minute observation period and variable 2 was divided by the sum of variables 1, 2 and 3 for each 18-minute observation period). Figures 6 and 7 present line graphs of the mean proportion of self and nonself acts for the subjects in Groups I and II. As can be noted, "standardizing" these data did not yield different findings. Hence, statistical analyses of the proportionalized self and nonself data was not undertaken.

Conclusion. VTR was shown to be ineffective in increasing the extent to which the experimental subjects focused conscious attention on themselves.

Table 4

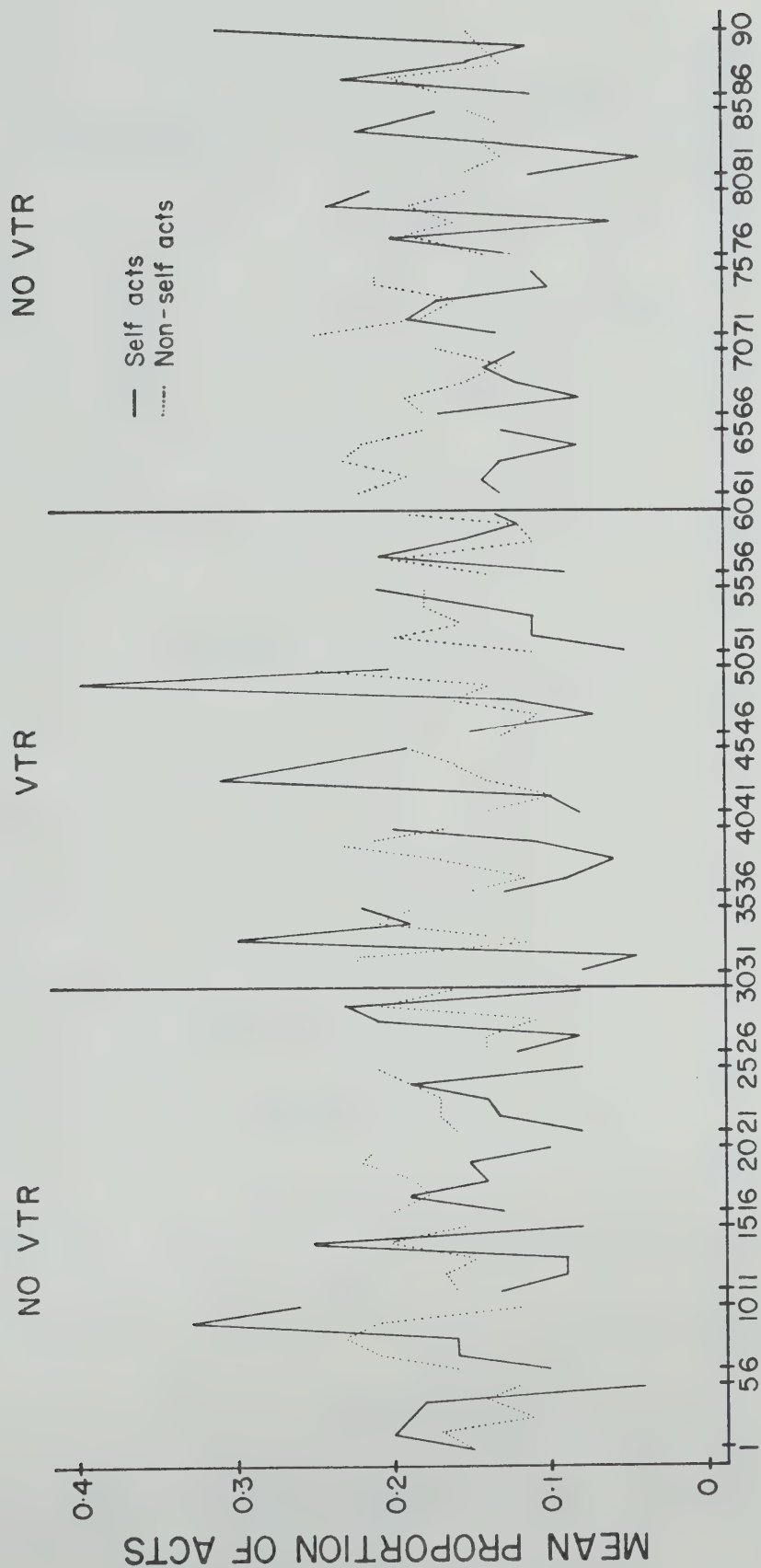
Results of ARIMA Analyses of Effects of VTR Intervention
on Self Acts in Groups I and II

Variable	Group	Model	Maximum Likelihood Value for Change in Level	t	Significance	Data Used*
Self acts	I	0, 1, 1	.22	.59**	NS	30 30
Self acts	I	0, 2, 2	-2.87	-2.80**	SIG	30 30
Self acts	II	0, 1, 1	-0.22	-0.46***	NS	30 30 30

*Intervention observations are underlined

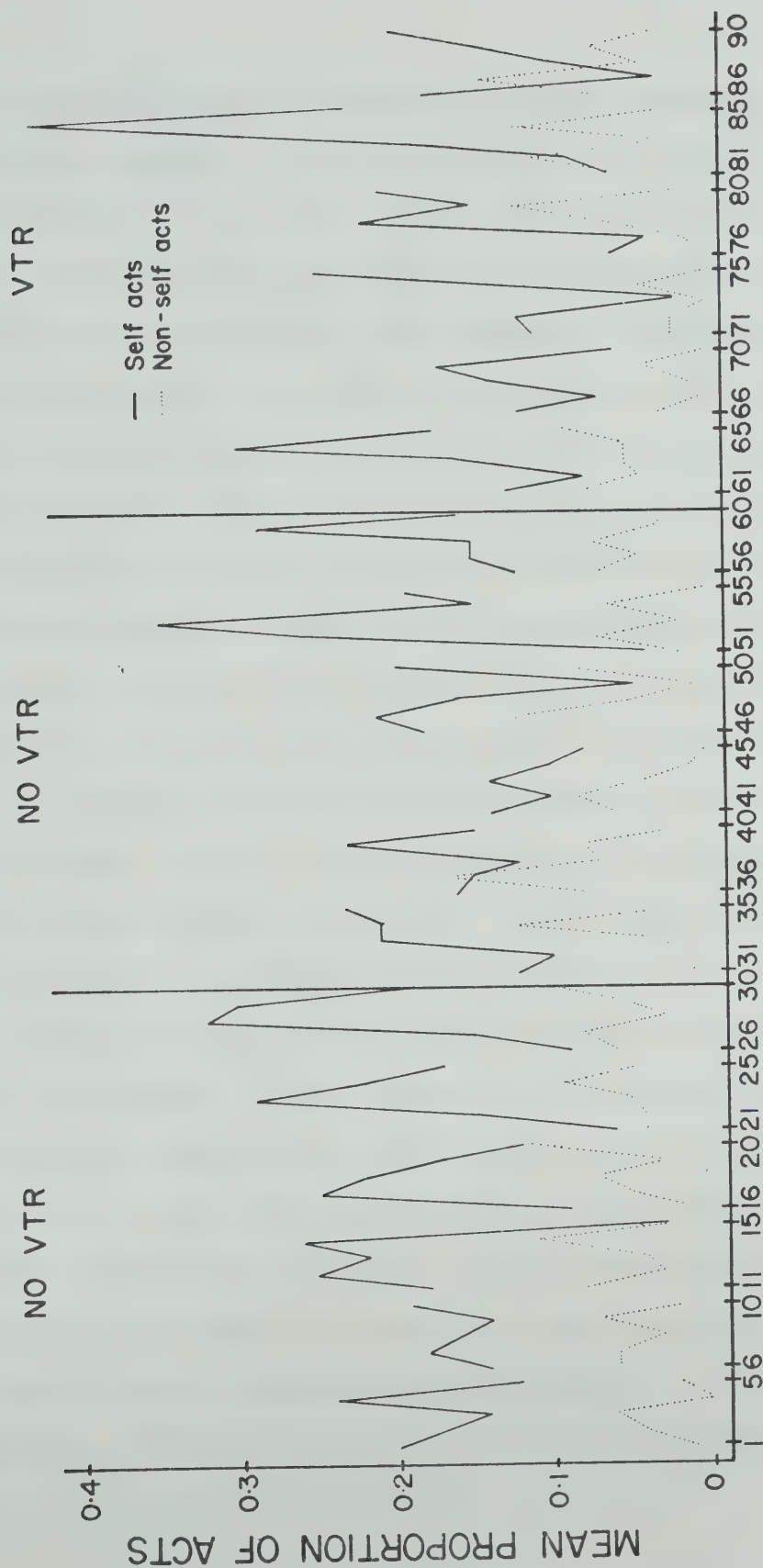
**58 degrees of freedom

***88 degrees of freedom



18 MINUTE OBSERVATION PERIODS

Fig. 6. Mean proportion of self and nonself acts emitted by subjects in Group I per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)



18 MINUTE OBSERVATION PERIODS

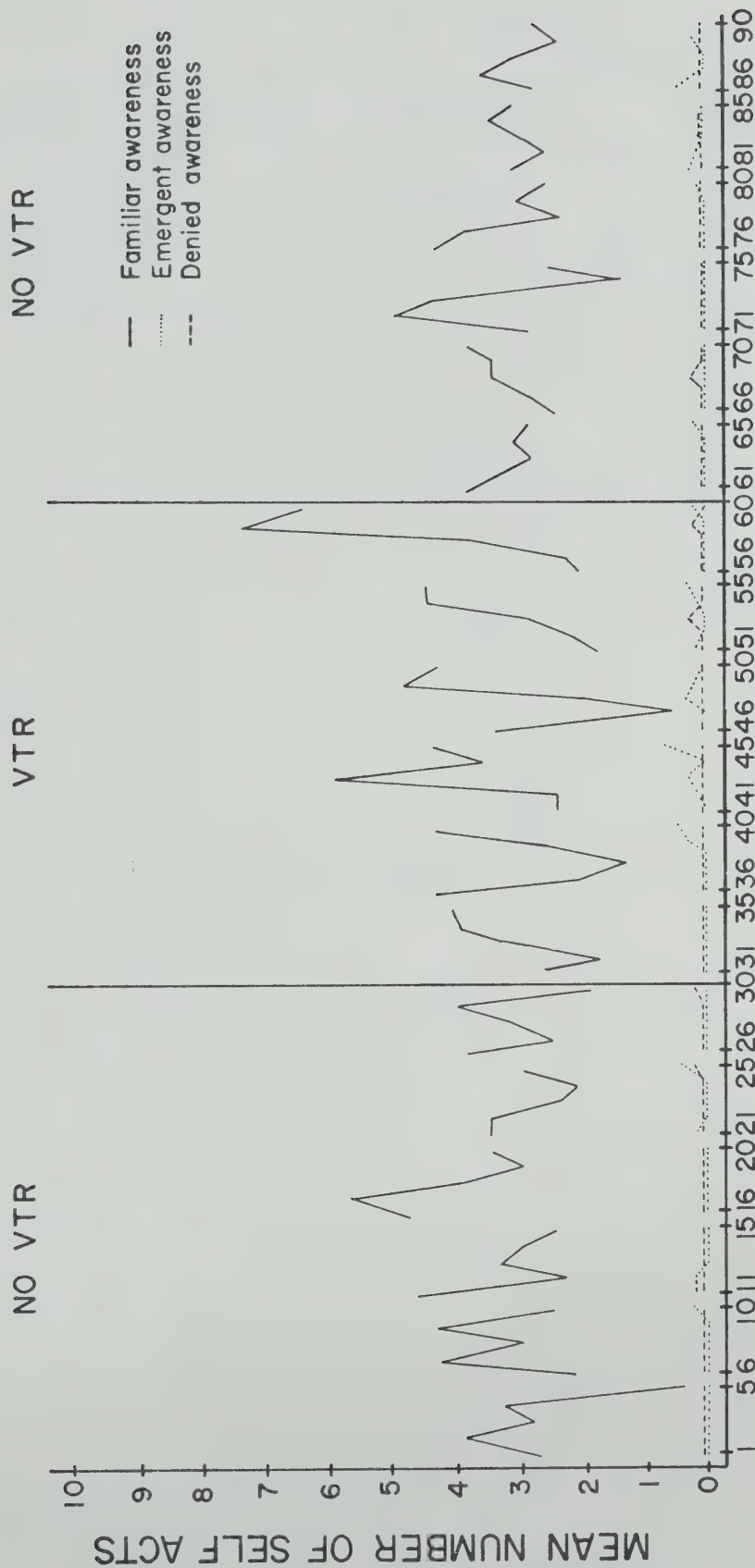
Fig. 7. Mean proportion of self and nonself acts emitted by subjects in Group II per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

Familiar, emergent and denied awareness: Dependent variables 4, 5 and 6

Of primary interest in the present study was the assertion that VTR causes "increased" self-awareness. That is, by increasing the range of stimulus information therapy participants have about themselves (through VTRs) and by helping them process that information, therapists reportedly can accelerate a change in the extent to which their clients use the operations of differentiation and integration while processing information about themselves. Thus, it was expected that the self-confrontation process would (a) significantly increase the number of self acts scored in the emergent awareness category and (b) significantly decrease the number of self acts scored in the familiar awareness category.

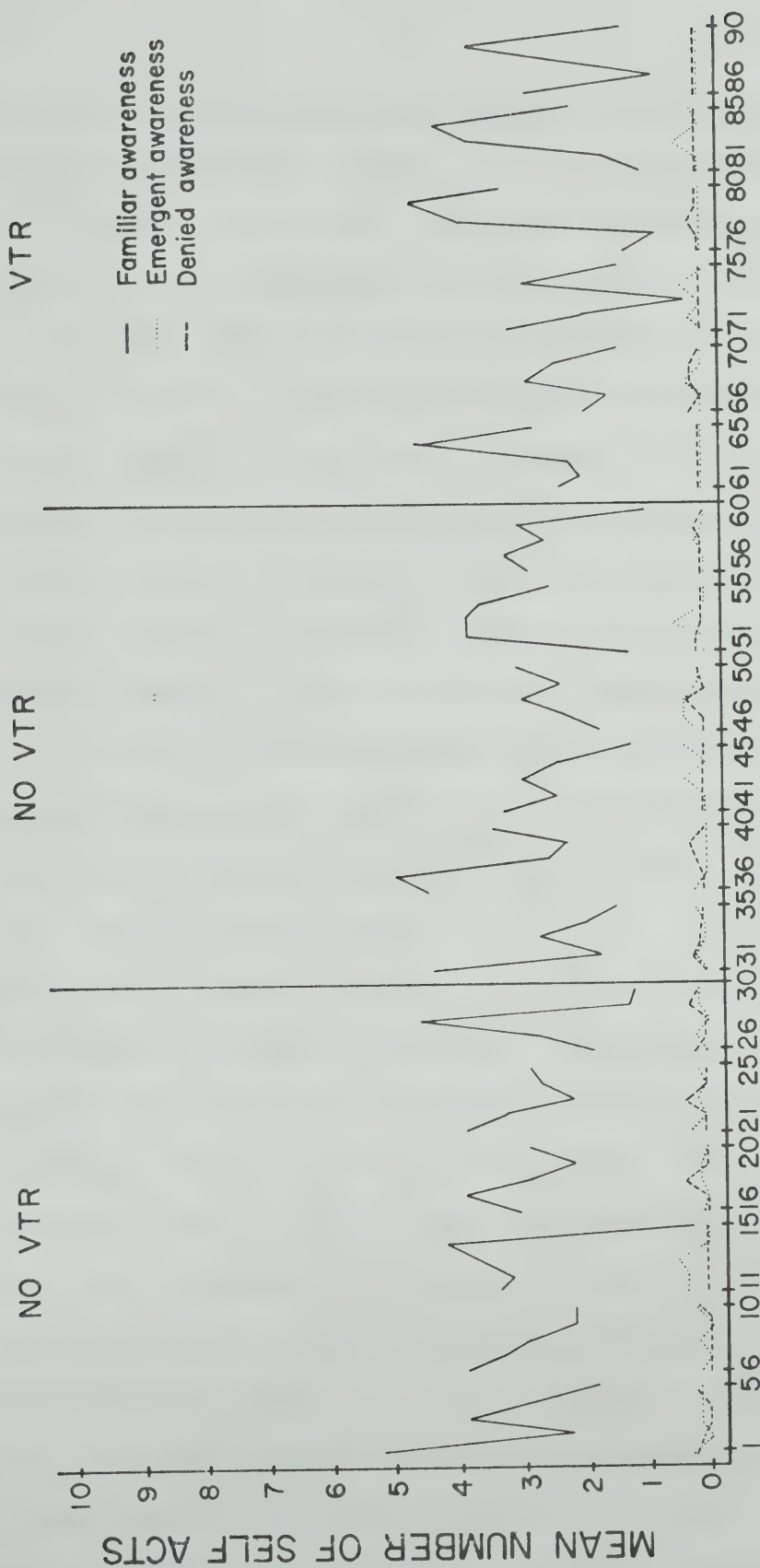
Figures 8 and 9 present line graphs of the mean number of self acts scored in the familiar, emergent and denied awareness categories for the subjects in Groups I and II. Visual examination of the familiar and emergent time-series depicted in Figures 7 and 8 reveals that these time-series were relatively unaffected by the introduction of VTR, indicating that the self-confrontation process did not increase the experimental subjects' self-awareness. Visual examination of the denied time-series indicates that the experimental subjects rarely denied the facts of their experience. Hence, this scoring system category could not be used to infer increased self-awareness. On the basis of these visually derived findings, the familiar, emergent and denied awareness data for Groups I and II were not submitted for ARIMA analysis.

Conclusion. VTR was shown to be ineffective in increasing the self-awareness of the experimental subjects.



18 MINUTE OBSERVATION PERIODS

Fig. 8. Mean number of self acts emitted by the subjects in Group I scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)



18 MINUTE OBSERVATION PERIODS

Fig. 9. Mean number of self acts emitted by the subjects in Group II scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

Positive, negative and neutral esteem: Dependent variables 7, 8 and 9

Therapists using VTR self-confrontation have emphasized the fact that initially patients tend to have marked emotional reactions (both positive and negative) to seeing and hearing themselves on television replay. Usually this "image impact" disappears with additional self-confrontation. However, if additional self-confrontations exacerbate an initial negative reaction - i.e., induce increased loss of self-esteem - then therapists caution that the patient experiencing this exacerbation may well become a playback "casualty". Thus, an important aspect of the present investigation was the effect of VTR on the self-evaluations of the experimental subjects. Because of the care taken in selecting the content for playback, it was expected that the introduction of VTR would (a) significantly increase the number of self acts scored in the positive esteem category and (b) significantly decrease the number of self acts scored in the negative esteem category.

Figures 10 and 11 present line graphs of the mean number of self acts scored in the positive, negative, and neutral self-esteem categories for the subjects in Groups I and II. As can be noted, the introduction of VTR did not change the level or drift of the positive and negative time-series, indicating that VTR did not significantly influence the nature of the subjects' self-evaluations. On the basis of these visually derived findings, the positive and negative esteem data for Groups I and II were not submitted for ARIMA analyses. It should be noted in conclusion, however, that the number of self acts scored in the negative esteem category usually exceeded the number of self acts scored in the positive esteem category. Moreover, the number of self acts scored in the neutral

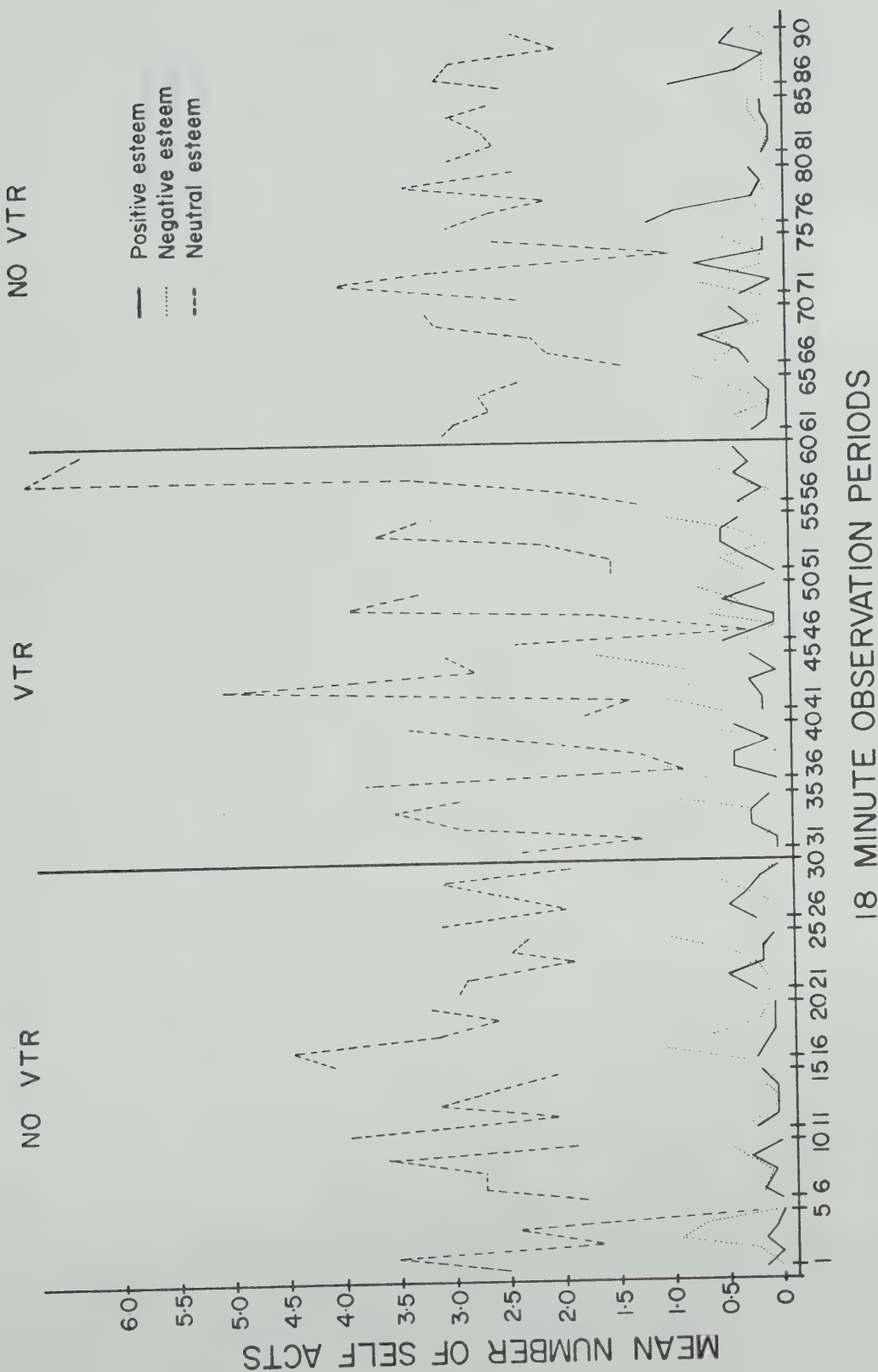


Fig. 10. Mean number of self acts emitted by the subjects in Group I scored in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

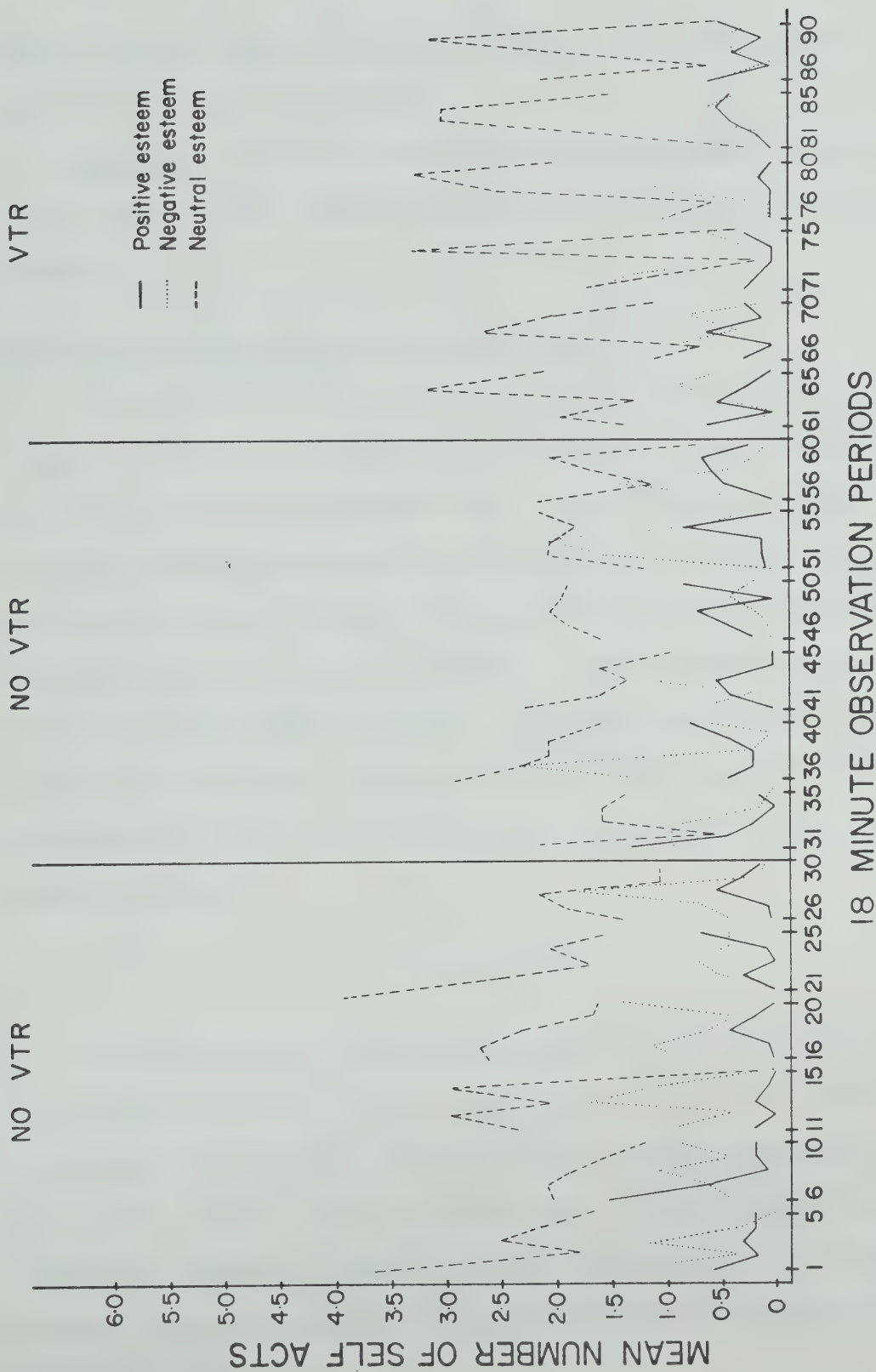


Fig. 11. Mean number of self acts emitted by the subjects in Group II scored in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

esteem category tended to exceed the number of self acts scored in the positive and negative categories.

Conclusion. The self-confrontation procedure used in this study did not significantly influence the self-esteem of the experimental subjects.

Repeated measures analyses of the group data

The means on each of the variables for each of the subjects in Groups I and II were clustered - i.e., the means on each variable for each subject for therapy sessions 1-6, 7-12 and 13-18 were added together, yielding three measures on each variable for each subject - and two factor analyses of variance (ANOVAs) with repeated measures on Factor B were obtained on each of the study variables. Table 5 summarizes the results of these repeated measures analyses. As can be noted, none of the F ratios were significant. Hence, it can again be concluded that the introduction of VTR did not significantly influence the nine scoring system variables.

Individual Data

Recognizing that it may be misleading to average data over subjects (cf. Gottman, 1973, pp. 93-96), change within subjects over time was also considered. Although all of the individual data were examined, only the data on two subjects will be presented here. These subjects, one from each group, appeared to exhibit the most change across the 18 therapy sessions. As will be noted, the group findings are confirmed by the individual data.

Table 5

Summary of F Ratios Found in Each Two-Factor ANOVA
 With Repeated Measures on the Time Factor
 for Each of the Scoring System Variables

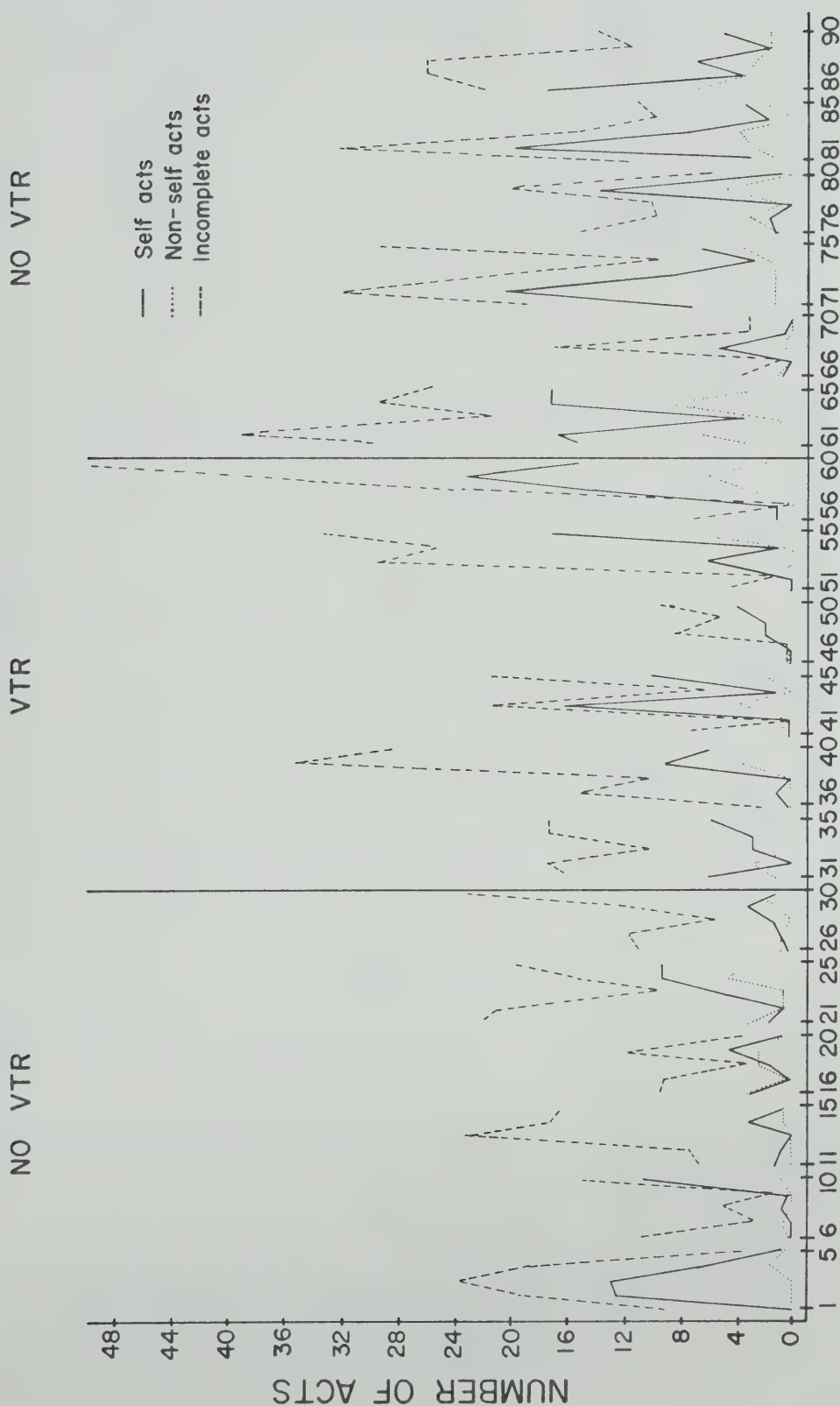
Variable	Group Main Effect	Time Main Effect	Time x Group Interaction
Self acts	0.38	0.34	0.14
Nonself acts	1.65	0.01	1.78
Incomplete acts	4.52	0.21	0.20
Familiar awareness	0.48	0.28	0.10
Emergent awareness	0.00	1.35	1.66
Denied awareness	3.84	2.31	2.28
Positive esteem	0.31	1.04	2.28
Negative esteem	0.95	2.95	1.09
Neutral esteem	2.55	0.15	1.92

Self, nonself and incomplete acts: Dependent variables 1, 2 and 3

Subject 2 (Group I). Figure 12 presents line graphs of the number of self, nonself and incomplete acts emitted by Subject 2 during the 90 18-minute observation periods of this experiment. Visual examination of Figure 12 reveals that across the three treatment periods (i.e., no VTR, VTR, no VTR) there appears to be a gradual increase in the level of the self act series. However, since this increase in level coincides with a similar increase in the total number of acts initiated in each treatment period, it is likely that the gradual increase in the level of self acts is a function of the acquisition of power by this person (Bales, 1950, 1970) rather than a function of VTR. Examination of the incomplete act series depicted in Figure 12 reveals that the introduction of VTR increased the variance of this series, suggesting that Subject 2 may have experienced a marked and continued self-image reaction. The nonself act series depicted in Figure 12 resembles that of the self act series in that the level of the series appears to increase across the three treatment periods.

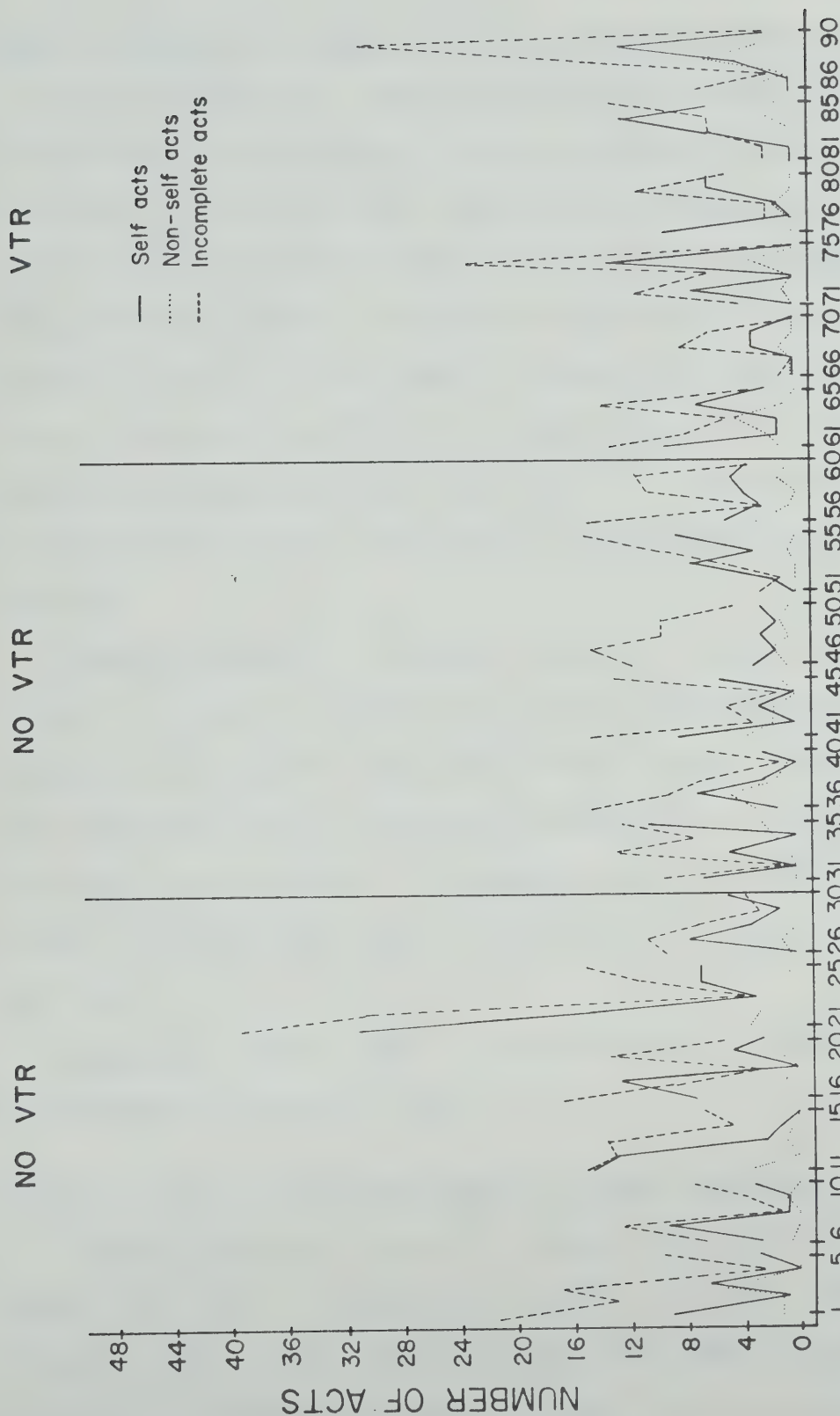
Subject 9 (Group II). Figure 13 presents line graphs of the number of self, nonself and incomplete acts emitted by Subject 9 during the 90 18-minute observation periods of this experiment. Visual examination of Figure 13 reveals that the introduction of VTR had relatively little effect on these time-series.

Conclusion. VTR was shown to be ineffective in increasing the extent to which experimental subjects 2 and 9 focused conscious attention on themselves.



18 MINUTE OBSERVATION PERIODS

Fig. 12. Number of self, nonself and incomplete acts emitted by Subject 2 per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)



18 MINUTE OBSERVATION PERIODS

Fig. 13. Number of self, nonself and incomplete acts emitted by Subject 9 per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

Familiar, emergent and denied awareness: Dependent variables 4, 5 and 6

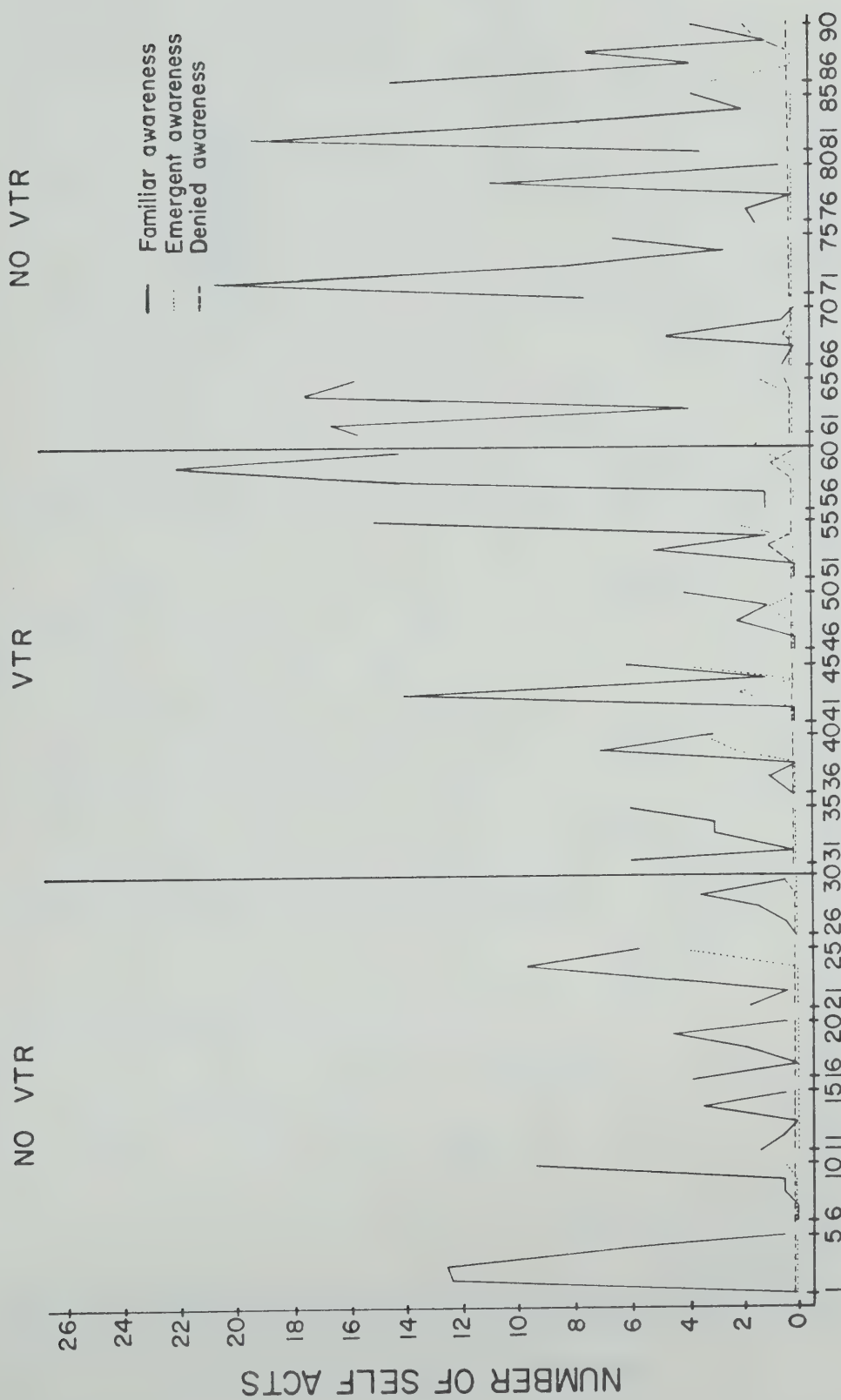
Subject 2 (Group I). Figure 14 presents line graphs of the number of acts scored in the familiar, emergent and denied awareness categories for Subject 2. As can be noted, the level of the familiar series gradually increases across the three treatment periods, whereas the emergent series remains relatively stable. It should be emphasized for the sake of precision, however, that the number of emergent self acts emitted by Subject 2 during the six VTR therapy sessions was greater than the number emitted during the 12 non-VTR therapy sessions. Visual examination of the denied series reveals that Subject 2 rarely denied the facts of his experience.

Subject 9 (Group II). Figure 15 presents line graphs of the number of self acts scored in the familiar, emergent and denied awareness categories for Subject 9. Apart from a sharp increase during the twenty-first observation period, the familiar time-series was relatively stable. Similarly, the progression of the emergent time-series was relatively stable. As can be noted, Subject 9 never denied the facts of his experience.

Conclusion. VTR was shown to be ineffective in increasing the self-awareness of Subjects 2 and 9.

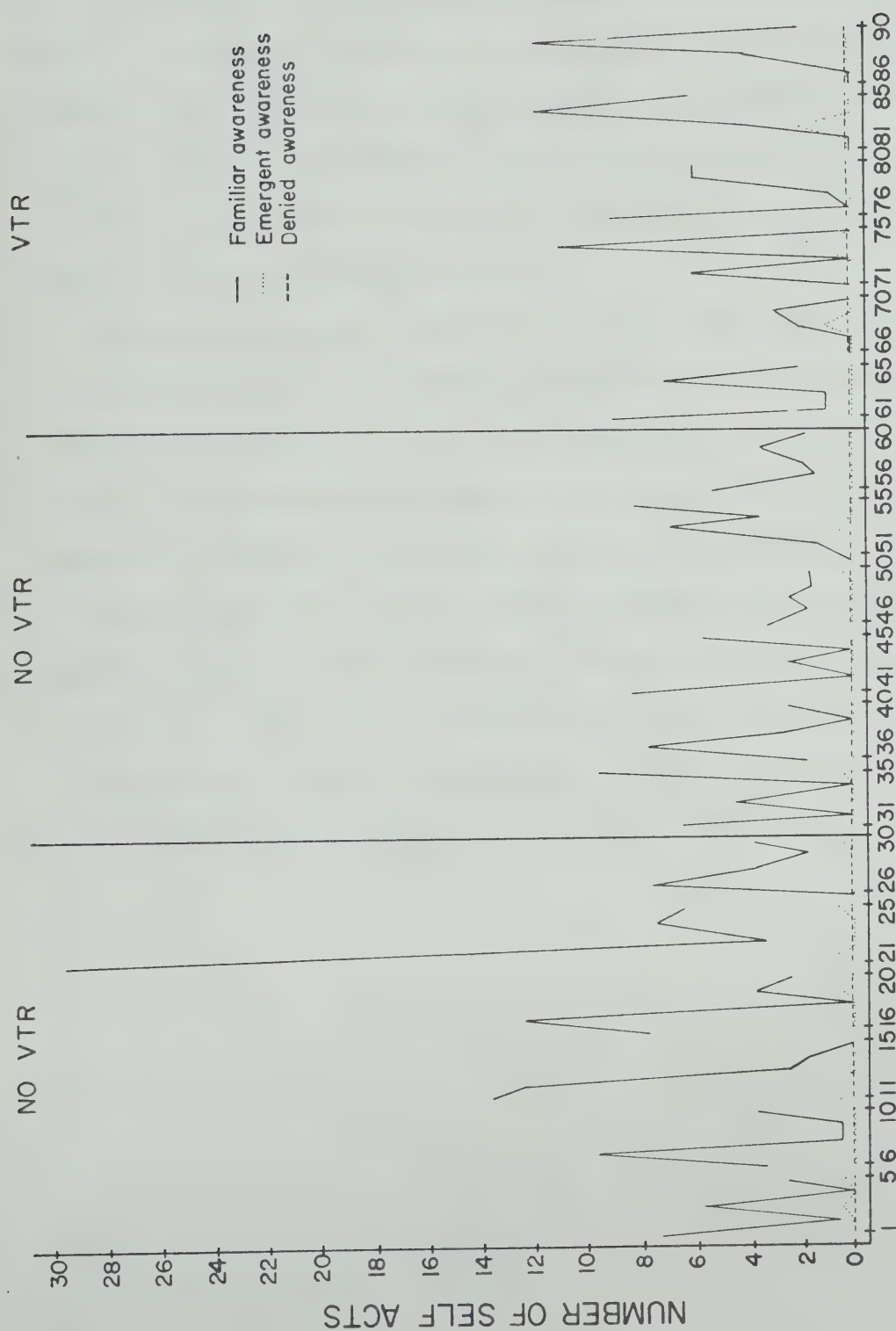
Positive, negative and neutral esteem: Dependent variables 7, 8 and 9

Subject 2 (Group I). Figure 16 presents line graphs of the number of self acts scored in the positive, negative and neutral esteem categories for Subject 2. As can be noted, the number of negative esteem self acts emitted by Subject 2 in each 18-minute observation



18 MINUTE OBSERVATION PERIODS

Fig. 14. Number of self acts emitted by Subject 2 scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)



18 MINUTE OBSERVATION PERIODS

Fig. 15. Number of self acts emitted by Subject 9 scored in the familiar, emergent and denied awareness categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

period usually exceed the number of positive esteem self acts. Moreover, the progression of the positive and negative esteem series was relatively stable. In contrast, the level of the neutral esteem series gradually increases across the three treatment periods, corresponding with an overall increase in the number of acts initiated by Subject 2. It should be noted in conclusion that almost all of Subject 2's self acts were scored in the neutral esteem category.

Subject 9 (Group II). Figure 17 presents line graphs of the number of self acts scored in the positive, negative and neutral esteem categories for Subject 9. While the introduction of VTR did not appear to affect the progression of these time-series, it should be noted that the number of positive esteem self acts emitted by Subject 9 during the VTR therapy sessions was greater than the number emitted during the non-VTR therapy sessions. As was the case with Subject 2, almost all of Subject 9's self acts were scored in the neutral esteem category.

Conclusion. The self-confrontation procedure used in this study did not significantly influence the self-esteem of Subjects 2 and 9.

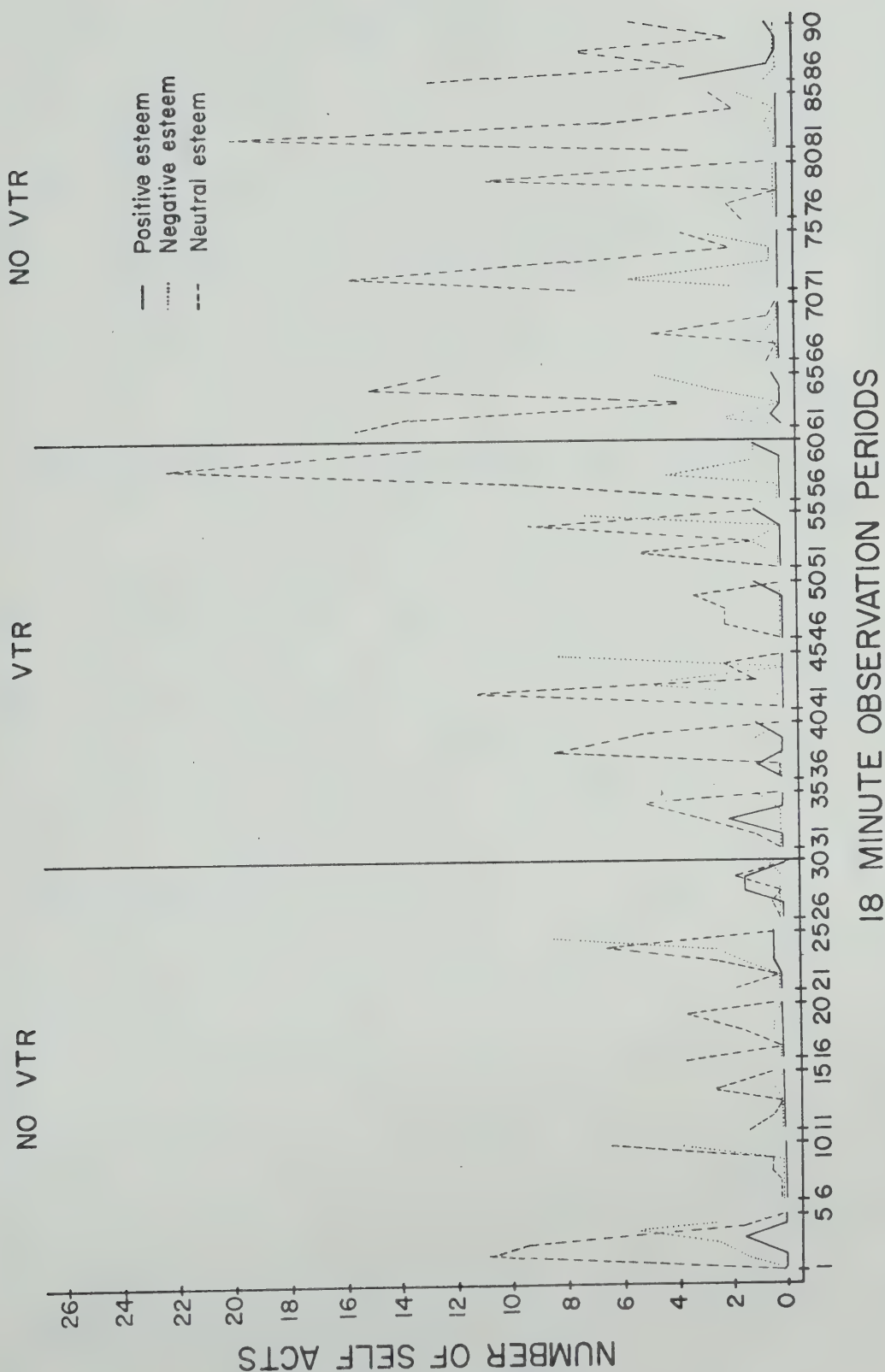
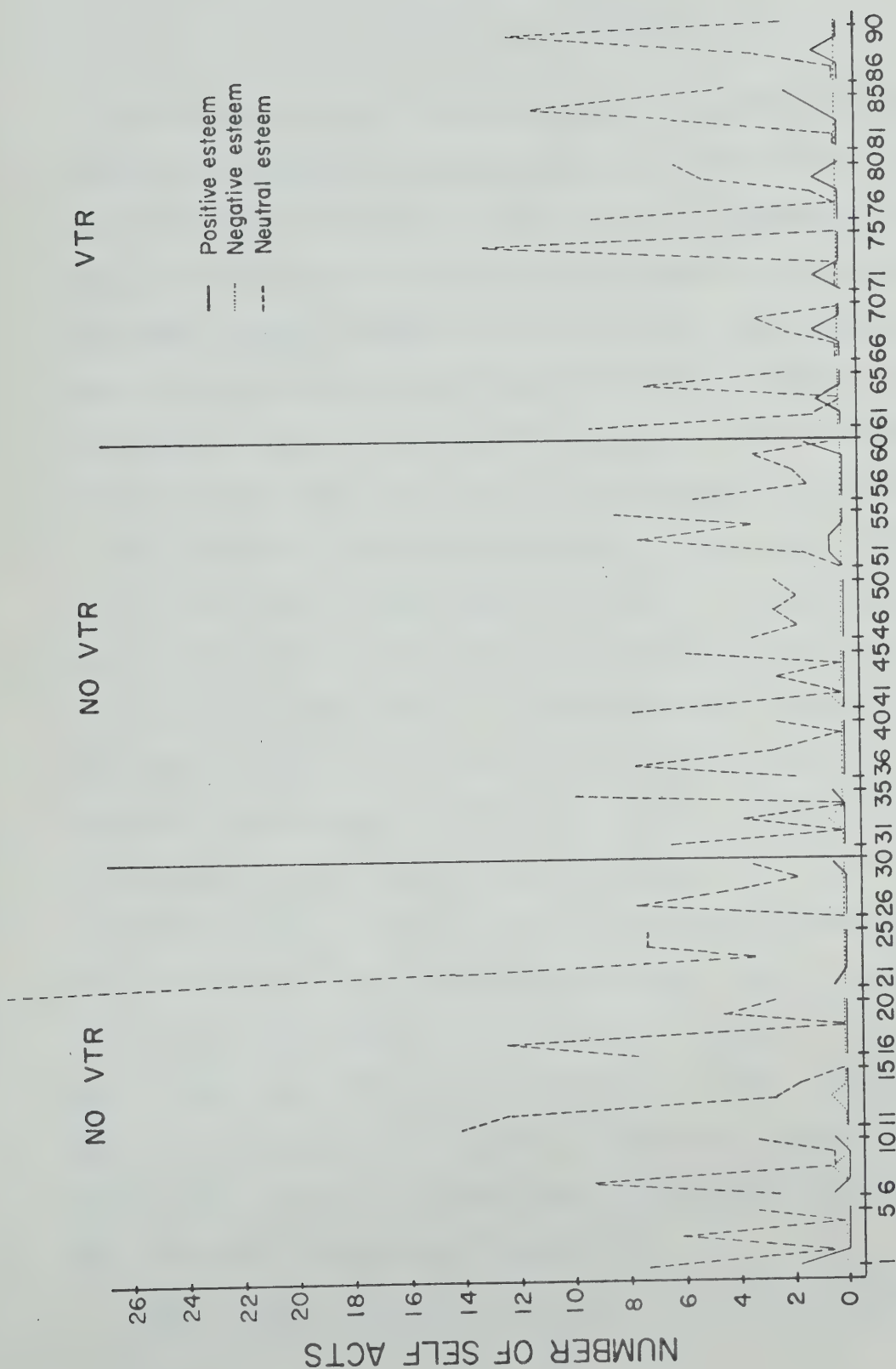


Fig. 16. Number of self acts emitted by Subject 2 in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)



18 MINUTE OBSERVATION PERIODS

Fig. 17. Number of self acts emitted by Subject 9 in the positive, negative and neutral esteem categories per 18 minutes of therapy time across 18 therapy sessions (therapy sessions are represented by connected data points; an interruption in the graphic presentation of the data represents a between-session time interval)

CHAPTER VI

SUMMARY AND DISCUSSION

The primary purpose of this study was to experimentally evaluate the technique of confronting therapy participants with videotape playbacks of their own previously recorded therapy behavior. Accordingly, 16 psychiatric day hospital patients were assigned to one of the following two conditions: Group I (eight experimental subjects participating in 18 group therapy sessions and receiving four-minute playbacks of themselves in sessions 7, 8, 9, 10, 11 and 12) and Group II (eight experimental subjects treated like Group I but receiving playbacks in sessions 13, 14, 15, 16, 17 and 18). Transcribed protocols of these group therapy sessions were obtained and the verbal behavior of each of the experimental subjects was content-analyzed according to a self-awareness observational system developed by the investigator. It was assumed that the data derived from this content analysis would verify the personal testimonials of therapists concerning the therapeutic efficacy of videotape playback. Specifically, it was expected that playbacks would (a) increase the extent to which the experimental subjects focused conscious attention on themselves, (b) increase the self-awareness of the experimental subjects, and (c) significantly influence the self-esteem of the experimental subjects. Surprisingly, none of these expectations were confirmed by the data. In short, the assertion that therapy with playback is superior to therapy without playback viz. changes in self-awareness and self-esteem was not supported when subjected to experimental examination.

From a logical standpoint, the results of this investigation may be

construed in two ways. On the one hand, we may assume that the dependent variables were validly measured and thus conclude that this form and "amount" (i.e., 24 minutes) of playback did not facilitate the therapeutic process. On the other hand, we may assume that the dependent variables were not validly measured and thus conclude that even if this form and "amount" of playback did facilitate the therapeutic process, this facilitation would not be reflected in the data. Thus, a word of caution concerning the scoring system is in order before proceeding to a detailed discussion of the results and their implications.

The Self-Awareness Scoring System

The self-awareness scoring system is based on a representational rather than an instrumental model of language behavior (Pool, 1959) and herein, perhaps, lies its major weakness. To elaborate, the scoring system limits the content analyst to the semantic and syntactic aspects of communication, in which meanings are relatively public, and prevents extension to the instrumental aspect - to the relationship between the communication symbol and its user. Put in other terms, the content analyst codes relevant content units to the self-awareness and self-esteem categories on the basis of inference viz. the "manifest content" of the communication rather than on the basis of clinical inference viz. the "latent content" of the communication. It is this lack of clinical judgment, however, that is the point at issue. Specifically, by not "getting at" the underlying psychological meaningfulness of the communication, it can be argued that the scoring system yields shallow as opposed to thorough results. Admittedly, this may be the case, particularly with

respect to the esteem data (note: the number of self acts scored in the neutral esteem category tended to exceed the number of self acts scored in the positive and negative esteem categories). However, if the representational restriction were lifted, then the conditions under which the content analyst is to infer the relationship between the communication symbol and its user would have to be formalized - a very difficult, if not impossible task (cf. Mahl, 1959; Strupp, 1962, pp. 590-591; Gottschalk, 1961, p. 161; Colby, 1963 for elaboration of this issue). In short, the representational restriction constitutes a weakness of the scoring system, but a weakness that was tolerated in order to ensure the procedural rigor suitable to a scientific undertaking.

To summarize, although the basic, difficult work of obtaining reliable measurements has been completed, one cannot afford the luxury of presuming that the scoring system really measures what it is supposed to be measuring. Obviously, the next step is to attempt construct validation studies using the scoring system. One major focus of these studies would be to determine the psychological significance of the measurements themselves - i.e., what is the scoring system's ability to produce empirical relations to other variables that satisfy theoretical or common sense reasoning? However, since so little is known about the relations of self-awareness and self-esteem to any other important variable, very nearly any pattern of outcomes can be theoretically rationalized and thus rendered plausible. (Note: see Bandura's (1969, pp. 564-623) summary of the controversy surrounding the role of symbolic processes in the regulation of behavior as a case in point.)

In addition to tracing out the determinants and correlates of self-

awareness and self-esteem, two further steps must be taken - one in the context of scientific relevance, the other in the context of human value relevance. First, it must be demonstrated that self-awareness and self-esteem are in fact highly important in regulating subsequent behavior, adding substantially to our ability to understand, explain and predict behavior. This work would provide answers to the question of scientific relevance. But beyond this advancement of science, it is important that we recognize and act upon our value premises and seek out persons possessing what seem to be optimum "levels" of self-awareness and self-esteem. Here we should take very seriously the idealistic but ultimately humane guidelines to healthy growth and full functioning set forth by our more comprehensive and articulate prophets, such as Fromm, Reisman, Maslow, Rogers and Erikson. At this point, our tracing of the determinants, correlates and consequences of particular desired "levels" of self-awareness and self-esteem makes must sense. Only by illuminating the individual and social processes involved in optimal functioning can we make our sciences truly relevant to the human values of all who care to use these insights in understanding and actively guiding their own lives.

The Efficacy of Videotape Self-confrontation in Psychotherapy

Presuming that "reality" is validly encapsulated by the scoring system categories, how does one explain the data, particularly in the light of over 60 published clinical reports (cf. Bailey & Sowder, 1970; Danet, 1968) to the effect that playback greatly expedites the therapy process? On the basis of my experience with this research project, it would seem reasonable to speculate that therapists who have ascribed therapeutic benefits to playback may have done so on the basis of the "striking emotional reactions"

of their patients. To elaborate, were I to have written a clinical report based on my subjective impressions of the patients' reactions to the self-confrontation process, my report, in all likelihood, would have resembled the published clinical reports. Indeed, I too would have reported that (a) VTR increased the extent to which the patients focused conscious attention on themselves, (b) increased self-awareness, and (c) significantly influenced self-esteem. However, once I began rating the patients' verbal behavior, using the self-awareness scoring system, I found, much to my surprise, that the data did not support my clinical impression. Thinking that the gestural and instrumental aspects of communication had possibly been major factors influencing my clinical "impression", I replayed a number of videorecordings of the experimental VTR therapy sessions and found that I could no longer "see" the change I originally thought occurred. In retrospect, it seems that I was impacted by the "striking emotional responses" of the patients and, unchecked by empirical data, overestimated the efficacy of the technique. Is this the kind of human error that underlies Bandura's (1969) observation:

New . . . change procedures (i.e., videotape playbacks) are by tradition enthusiastically promoted, and it is not until after the methods have been applied for some time by a coterie of enthusiasts that systematic tests of efficacy are conducted. Usually the methods are then unceremoniously retired . . . (p. 5).

Given that the active utilization of videotape self-confrontation as a therapy adjunct has now passed its tenth anniversary, and given that the only approach in playback "research" has been case reports, it may well be that with additional tests of efficacy, playback self-confrontation may be 'unceremoniously retired' as a therapy adjunct.

References

- Alger, I., & Hogan, P. The use of videotape recording in conjoint marital therapy. American Journal of Psychiatry, 1967, 123, 1425-1430.
- Alkire, A. A., & Brunse, A. J. Impact and possible casualty from videotape feedback in marital therapy. Journal of Consulting and Clinical Psychology, 1971, 42(2), 203-210.
- Allport, G. Becoming. New Haven: Yale University Press, 1955.
- Anderson, W. Personal growth and client-centered therapy: An information-processing view. In: D. A. Wexler & L. Rice (Eds.), Innovations in client-centered therapy. New York: Wiley, 1974. Pp. 21-48.
- Angyal, A. Foundations for a science of personality. New York: Commonwealth Fund, 1941.
- Bailey, K. G., & Sowder, W. T. Audiotape and videotape self-confrontation in psychotherapy. Psychological Bulletin, 1970, 74, 127-137.
- Bakan, D. The duality of human existence. Chicago: Rand McNally, 1966.
- Bales, R. F. Interaction process analyses: A method for the study of small groups. Cambridge, Mass.: Addison Wesley, 1950.
- Bales, R. F. Personality and interpersonal behavior. New York: Holt, Rinehart & Winston, 1970.
- Bandura, A. Principles of behavior modification. New York: Holt, Rinehart & Winston, 1969.
- Berger, M. M. (Ed.) Videotape techniques in psychiatric training and treatment. New York: Brunner/Mazel, 1970.
- Berger, M. M. Confrontation through videotape. In: M. M. Berger (Ed.), Videotape techniques in psychiatric training and treatment. New York: Brunner/Mazel, 1970. Pp. 18-35.
- Berger, M. M. The use of videotape in the integrated treatment of individuals, couples, families and groups in private practice. In: M. M. Berger (Ed.), Videotape techniques in psychiatric training and treatment. New York: Brunner/Mazel, 1970. Pp. 119-160.
- Biddle, B., & Thomas, E. (Eds.) Role theory: Concepts and research. New York: Wiley, 1966.
- Bloom, B. (Ed.) Taxonomy of educational objectives. Handbook I. Cognitive domain. New York: Longmans, Green, 1956.
- Carrere, M. J. Le psychococ cinematographique; principes et technique. Application au traitement des malades convalescents de delirium tremens. Annales Medico-Psychologiques, 1954, 112, 240-245.

- Carrere, M. J., Caignou, E., & Mille, Pochard. De quelques resultats du psychochoc cinematographique dans la psychotherapie des delirium et sub-delerium tremens, alcooliques. Annales Medico-Psychologiques, 1955, 113(2), 46-51.
- Carrere, M. J. Psychogenic de l'alcoolisme et attitude psychotherapique. Annales Medico-Psychologiques, 1958, 116, 481-495.
- Carkhuff, R. R., & Berenson, B. G. Beyond counseling and therapy. New York: Holt, Rinehart & Winston, 1967.
- Colby, K. M. A psychoanalyst's view of methods for studying emotions. In: P. H. Knapp (Ed.), Expression of emotions in man. New York: International Universities Press, 1963. Pp. 237-248.
- Cooley, C. H. Human nature and the social order. Revised edition. New York: Scribner's, 1922.
- Danet, B. N. Self-confrontation in psychotherapy reviewed. American Journal of Psychotherapy, 1968, 22(2), 245-258.
- Dember, W. N. The psychology of perception. New York: Holt, Rinehart & Winston, 1960.
- Duval, S., & Wicklund, R. A theory of objective self-awareness. New York: Academic Press, 1972.
- Erdelyi, M. H. A new look at the new look: Perceptual defense and vigilance. Psychological Review, 1974, 81(1), 1-25.
- Eriksen, C. W. Unconscious processes. In: M. R. Jones (Ed.), Nebraska Symposium on Motivation, 1958. Lincoln: University of Nebraska Press, 1958.
- Festinger, L. The theory of cognitive dissonance. New York: Harper & Row, 1957.
- Frankl, V. Man's search for meaning. Boston: Beacon Press, 1959.
- Fromm, E. Man for himself. New York: Rinehart, 1947.
- Garner, W. Uncertainty and structure as psychological constructs. New York: Wiley, 1962.
- Geertsma, R. H., & Reivich, R. S. Repetitive self-observation by videotape playback. Journal of Nervous and Mental Disease, 1965, 141, 29-41.
- Geertsma, R. H., & Reivich, R. S. Experiences with videotape self-observation by psychiatric in-patients. Journal of Kansas Medical Society, 1968, 69, 39-44.

- Gergen, K. The concept of self. New York: Holt, Rinehart & Winston, 1971.
- Glass, D. C. Theories of consistency and the study of personality. In: E. F. Borgatta & W. W. Lambert (Eds.), Handbook of personality theory and research. Chicago: Rand McNally, 1968. Pp. 788-854.
- Glass, G. V., Willson, V. L., & Gottman, J. M. Design and analysis of time-series experiments. Boulder: Colorado Associated University Press, 1975.
- Goffman, E. The presentation of self in everyday life. Garden City, NY: Doubleday, 1959.
- Gordon, C. Self-conception: Configuration of content. In: C. Gordon & K. J. Gergen (Eds.), The self in social interaction. Vol. 1. New York: Wiley, 1968. Pp. 115-136.
- Gottman, J., McFall, R., & Barnett, J. Design and analysis of research using time series. Psychological Bulletin, 1969, 72(4), 299-306.
- Gottschalk, L. A. (Ed.) Comparative psycholinguistic analysis of two psychotherapeutic interviews. New York: International Universities Press, 1961.
- Haber, R. N., & Hershenson, M. The psychology of visual perception. New York: Holt, Rinehart & Winston, 1973.
- Harvey, O. J., Hunt, D. E., & Schroder, H. M. Conceptual systems and personality organization. New York: Wiley, 1961.
- Heider, F. The psychology of interpersonal relations. New York: Wiley, 1958.
- Horney, K. Our inner conflicts. New York: Norton, 1945.
- Hunt, E. What kind of computer is man? Cognitive Psychology, 1971, 2, 57-98.
- Kasawan, J., Love, L., & Rodnick, E. H. Information feedback as a method of clinical intervention and consultation. In: C. E. Spielberger (Ed.), Current topics in clinical and community psychology. New York: Academic Press, 1971.
- Kay, B. A map for explorations in rolecentrism. Journal of Social Psychology, 1966, 70, 39-52.
- Kelly, G. A. The psychology of personal constructs. Vol. 1. New York: Norton, 1955.

- Kubie, L. S. Some aspects of the significance to psychoanalysis of the exposure of a patient to the televised audiovisual reproduction of his activities. Journal of Nervous and Mental Disease, 1969, 148, 301-309.
- Lewin, K. The conflict between Aristotelian and Galilean modes of thought in contemporary psychology. In: D. K. Adams & K. E. Zener (Eds.), A dynamic theory of personality. New York: McGraw-Hill, 1935. (a)
- Lewin, K. A dynamic theory of personality: Selected papers. New York: McGraw-Hill, 1935. (b)
- Lindsay, P. H., & Norman, D. A. Human information processing: An introduction to psychology. New York: Academic Press, 1972.
- Mahl, G. F. Exploring emotional states by content analysis. In: I. Pool (Ed.), Trends in content analysis. Urbana: University of Illinois Press, 1959. Pp. 89-130.
- Marsden, G. Content-analysis studies of psychotherapy: 1954 through 1968. In: A. E. Bergin & S. L. Garfield (Eds.), Handbook of psychotherapy and behavior change. New York: Wiley, 1971. Pp. 345-407.
- Maslow, A. H. Critique of self-actualization. Journal of Individual Psychology, 1959, 15, 24-33.
- Mead, G. H. Mind, self and society. Chicago: University of Chicago Press, 1934.
- Miller, D. R. The study of social relationships: Situation, identity, and social interaction. In: S. Koch (Ed.), Psychology: A study of a science. Vol. 5. New York: McGraw-Hill, 1963.
- Miller, G. A. The magical number seven, plus or minus two: Some limits on our capacity for processing information. Psychological Review, 1956, 63, 81-97.
- Miller, G. A., Galanter, E., & Pribram, K. H. Plans and the structure of behavior. New York: Holt, 1960.
- Mischel, W. Toward a cognitive social learning reconceptualization of personality. Psychological Review, 1973, 80(4), 252-283.
- Moore, F. J., Chernell, E., & West, M. Television as a therapeutic tool. Archives of General Psychiatry, 1965, 12, 217-222.
- Osgood, C. E., & Tannenbaum, P. H. The principle of congruity in the prediction of attitude change. Psychological Review, 1955, 62, 42-55.

- Parades, A., Ludwig, K. D., Hassenfeld, I. N., & Cornelison, F. S.
A clinical study of alcoholics using audiovisual self-image feedback.
Journal of Nervous and Mental Disease, 1969, 148, 449-456.
- Parades, A., & Cornelison, F. S. Development of an audiovisual technique
in the rehabilitation of alcoholics. Unpublished manuscript cited in
M. M. Berger, Confrontation through videotape. In: M. M. Berger (Ed.),
Videotape techniques in psychiatric training and treatment. New York:
Brunner/Mazel, 1970.
- Paul, G. L. Behavior modification research: Design and tactics. In:
C. M. Franks (Ed.), Behavior therapy appraisal and status. New York:
McGraw Hill, 1969. Pp. 29-62.
- Piaget, J. The origins of intelligence in children. New York: Norton,
1963.
- Piaget, J. Judgment and reasoning in the child. First edition 1924.
Totowa, NJ: Littlefield, Adams, 1966.
- Pool, I. Trends in content analysis today: A summary. In: I. Pool (Ed.),
Trends in content analysis. Urbana: University of Illinois Press,
1959. Pp. 206-212.
- Rogers, C. A theory of therapy, personality and interpersonal relation-
ships. In: S. Koch (Ed.), Psychology: A study of a science.
Vol. 3. New York: McGraw-Hill, 1959. Pp. 184-256.
- Schaefer, H. H., Sobell, M. B., & Mills, C. K. Some sobering data on the
use of self-confrontation with alcoholics. Behavior Therapy, 1971,
2, 28-39.
- Shiffrin, R. M., & Atkinson, R. C. Storage and retrieval processes in
long-term memory. Psychological Review, 1969, 76, 179-193.
- Shiffrin, R. M., & Geisler, W. S. Visual recognition in a theory of
information processing. In: R. L. Solso (Ed.), Contemporary issues
in cognitive psychology. Washington, DC: Winston, 1973.
- Sperling, G. Successive approximations to a model for short-term memory.
Acta Psychologica, 1967, 27, 285-292.
- Strupp, H. H. Patient-doctor relationships: The psychotherapist in the
therapeutic process. In: A. J. Bachrach (Ed.), Experimental
foundations of clinical psychology. New York: Basic Books, 1962.
Pp. 576-615.
- Sullivan, H. S. The interpersonal theory of psychiatry. New York:
Norton, 1953.

- Tabachnick, N. Self-realization and social definition: Two aspects of identity formation. International Journal of Psychoanalysis, 1967, 48, 68.
- Tighe, L. S., & Tighe, T. J. Discrimination learning: Two views in historical perspective. Psychological Bulletin, 1966, 66, 353-370.
- Waterbor, R. Experiential bases of the sense of self. Journal of Personality, 1972, 40(2), 162-179.
- Waugh, N. C., & Norman, D. A. Primary memory. Psychological Review, 1965, 72, 89-104.
- Wexler, D. A. A cognitive theory of experiencing, self-actualization, and therapeutic process. In: D. A. Wexler & L. A. Rice (Eds.), Innovations in client-centered therapy. New York: Wiley, 1974. Pp. 49-116.
- Wilmer, H. A. Television: Technical and artistic aspects of videotape in psychiatric teaching. Journal of Nervous and Mental Disease, 1967, 144, 207-223.
- Witkin, H. A., Dyk, R. B., Faterson, H. F., Goodenough, D. R., & Karp, S. A. Psychological differentiation. New York: Wiley, 1962.
- Witkin, H. A. Psychological differentiation and forms of pathology. Journal of Abnormal Psychology, 1965, 70, 317-336.
- Wylie, R. C. The present status of self-theory. In: E. F. Borgatta & W. W. Lambert (Eds.), Handbook of personality theory and research. Chicago: Rand McNally, 1968. Pp. 728-787.
- Wylie, R. C. The self concept: A critical survey of pertinent research literature. Lincoln: University of Nebraska Press, 1961.

APPENDIX A

Tables Related to Order of Playback Presentations

Table A1
 Order of Playback Presentations
 for the Patients in Group I

Patient	Session					
	7	8	9	10	11	12
1	fourth	third	second	fifth	second	second
2	first	eighth	fifth	sixth	seventh	seventh
3	sixth	sixth	seventh	first	sixth	third
4	seventh	fifth	third	third	fifth	fourth
5	fifth	fourth	first	eighth	eighth	fifth
6	third	first	sixth	seventh	first	eighth
7	eighth	seventh	fourth	second	fourth	sixth
8	second	second	eighth	fourth	third	first

Table A2
Order of Playback Presentations
for the Patients in Group II

Patient	Session					
	13	14	15	16	17	18
9	second	seventh	fourth	second	seventh	eighth
10	fourth	second	second	third	fourth	third
11	sixth	third	sixth	fourth	sixth	first
12	first	eighth	third	seventh	fifth	second
13	third	sixth	seventh	first	third	seventh
14	fifth	first	eighth	sixth	eighth	fifth
15	seventh	fifth	first	fifth	second	fourth
16	eighth	fourth	fifth	eighth	first	sixth

APPENDIX B

The Self-Awareness Scoring System Manual

Table of Contents

Units to be Scored	111
Rules for scoring self and nonself acts	111
Determining when a self or nonself act ends	114
Special scoring rules	115
Scoring a sample speech into self and nonself acts	116
Scoring Self Acts According to the Awareness Categories	118
Rules for scoring self acts in the emergent awareness category	118
Rules for scoring self acts in the familiar awareness category	120
Scoring self acts in the denied awareness category	120
Scoring Self Acts According to the Self-Esteem Categories	121
Appendix	123

The task of observers using this observational system is to examine and classify all of the verbal behavior emitted by a therapy participant into two broad areas: self-awareness and self-esteem. In order to do this, the observer scores therapy session units of transcribed verbal behavior. Each one therapy session unit of transcribed verbal behavior will be referred to as the speaker's "performance". Performances are scored in consecutive order; in other words, the context for scoring is what the speaker being scored has previously said. Scoring on all performances for a given therapy participant will yield a data complex called the "career" of that person.

Units to be Scored

The units to be scored are self and nonself "acts". A self act is a single sentence, a part of a sentence or a burst of sentences within which the speaker's attention is directed toward a consideration of himself. In contrast, a nonself act is a single sentence, a part of a sentence or a burst of sentences within which the speaker's attention is directed away from the self toward the external environment.

Rules for scoring self and nonself acts

1. Prepare to score one performance during each scoring period. You will proceed by examining a speech at a time. Read the entire speech, closely examining the various shades of meaning conveyed by the speaker. Attempt to summate the impression you have received about what the speaker is saying before you proceed to make your scoring decisions.

2. Examine each sentence in the speech separately and determine if the speaker's attention is directed toward a consideration of himself for all or part of the sentence using the following two rules:

(a) The speaker must refer directly or indirectly to himself. A speaker referring directly to himself is speaking with more immediacy than when he refers indirectly to himself.

(i) Direct references to self include those instances when the speaker considers himself using "I", "me" or "my".

(ii) Indirect references to self include those instances when the speaker refers to a class of persons which includes himself (e.g., "we", "everybody", "someone", "one", "you'd", "our").

(b) The speaker's self references must relate to one of the following three dimensions: bodily awareness, social roles or social identity and values. (Note: some self references relate to two or all of the dimensions.)

- (i) Bodily awareness. Four aspects of bodily awareness contribute to the experiential basis of the sense of self. First, there is nervous feedback from joints, skin, internal organs, muscles and external sense receptors. Such feedback provides information as to the states of temperature, pain, discomfort, and pleasure, as well as the senses of sight, smell, taste, touch and hearing.

Example:

"I have goosebumps all over me and yet I don't feel cold."

A second aspect of bodily awareness is awareness of the emotions - anger, joy, regret, etc., which are "felt", although not usually localized to specific parts of the body.

Example:

"I feel deprived of things that other people have had. Like, for instance, I have never felt accepted or loved by my family."

A third aspect of bodily awareness is awareness of controlled body movement; that is, the experience of controlling one's own movement and activity.

Example:

"I have been taking the kids up to my folks. And I said, I told them why I can't go back and like that."

Finally, a fourth kind of bodily awareness considered to be important to the sense of self is a mental image of the body, a continuously carried picture of "what it is that I look like".

Example:

"In general I think I am good looking."

- (ii) Social roles or social identity. Three aspects of social identification contribute to the experiential sense of self. The first aspect includes ascribed characteristics such as sex, age, racial or national heritage, or religious categorization.

Example:

"I am a middle-aged woman now."

The second aspect includes references to roles or memberships, such as kinship roles, student roles, social status, membership in an interacting group, etc.

Example:

"When I was a child I used to want to be pilot and an aeronautical engineer. Now I still want to be a pilot but my wife opposes it and its expensive." (Note: last part of the second sentence in this speech is a nonself act.)

The third aspect includes abstract identification.

Example:

The first of these portrays the individual as a unique, irreducible particle of being, not definable by reference to anything outside himself (generally a denial of the first two aspects of social identity).

"Me. An individual. I am what I am."

Example:

The second type places the person in some universal or very large and abstract category without implication of interaction among members (e.g., a sickie, a teenager, an alcoholic, etc.).

"Oh, I played the part. I was the darling, the junior executive on his way up."

Example:

The third form associates the person with some relatively comprehensive idea system, whether theoretical, philosophical, ideological, religious or political (e.g., a pacifist, a Christian, against the war in Viet Nam, a liberal, etc.).

"I'm a middle of the road type, between my ideas, my values, my expectations and views of things."

(iii) Values. Three components constitute this experiential basis of sense of self.

1. The actual or real self as manifested through behavior and attitudes.
2. The standards of correctness (values) by which the actual self is measured or evaluated.
3. The self-awareness which results in the comparison of 1 and 2.

To be scored on the value dimension, a direct or indirect reference to self must refer to at least one of these three components.

With respect to the second component, four types of standards define what a "correct" person is, or alternatively, what a person ought to be:

1. What a person should be - mental representations that pertain to the traits and abilities such as kindness, generosity and intelligence, which define what a correct person should be.
2. What a person should do - mental representations of situationally appropriate behaviors define how a person should act under various circumstances.

3. What a person should attain - mental representations of the correct goals such as education or financial success which define what the person should attain.
4. What a person should believe - mental representations; for example, belief "a" or "not a", which applies to the correctness of reality.

These standards may be "prescriptive" in that they operate to inform the person of which states are desirable; or they may be "prohibitive" standards of correctness which are expressed solely in the negative. Clearly, such standards do not give the individual as much direction as the prescriptive standards, for they demand only that certain points be avoided.

Examples:

"I talk fiercely and say things I don't mean, and this offends people. I've toned down. I don't feel I want to be brash."

"I'd like to be able to complain . . . to let my hair down like at home and act the way I feel. But I usually try to keep a stiff upper lip around people that I don't know well. I simply emulate optimism; I think in situations where I'm not well-known or do not know the people well.

"I'm aggressive about situations I don't see going any fruitful way. I don't know. Maybe I am too aggressive."

"My bad points outweigh my good ones."

"I'm very suspicious of people and I've come to the point where I very seldom believe them."

Determining when a self or nonself act ends

1. If the speaker's attention is directed toward a consideration of himself in all or part of the sentence, then that part of the speech is considered a self act. If a series of sentences, one after the other, have the self as their focus, they are scored as one self act.

2. All remaining sentences or parts of sentences are scored as nonself acts. As is the case with self acts, if a series of sentences occurs, one after the other, which have events external to the speaker as their focus, they are taken together and scored as one nonself act. Examples of nonself acts typically include agreement or disagreement with another's statements, giving and/or asking for information, suggestion or opinion. (Note: See the appendix of the manual for clarification of these nonself acts.)

Special scoring rules

1. If the sentence being emitted by the speaker is incomplete, that is, the speaker is interrupted or voluntarily fails to complete the sentence, the sentence is scored as an incomplete act. As with self and nonself acts, a series of incompleted sentences is scored as one incomplete act.

Example:

"Well, I . . . I . . . I think it	incomplete sentence
. . . I've got the feeling . . .	incomplete sentence
Even though we're in a group and we	
are reacting to a certain extent,	Note: a pause is not to be
any aims or ahm goals or anything	confused with an incomplete
that you've . . . that you can	sentence
possibly hope to reach are gonna	
be very personal things."	

This speech contains two acts: an incomplete act followed by a self act.

Example:

"I've always wanted to be liked	incomplete sentence;
by everybody but I found that I	speaker interrupted;
can't be liked by everybody	score as incomplete act
because I/"	

Example:

"I'm aggressive about situations	
that I don't see going any	self sentence
fruitful way.	
I don't know . . . that's just	one incomplete sentence with
the way . . .	a pause
Maybe I am too aggressive.	self sentence
What does everyone think?	nonsell sentence
You know."	slang - ignore

This speech contains four acts: a self act followed by an incomplete act, a self act and a nonsell.

2. Any expressions which can be considered as "mannerisms" or styles of speaking are not to be singled out for separate scoring.

Examples:

You know?
Okay?
See?
Like that.
Ah.

Scoring a sample speech into self and nonself acts

The speech:

"I felt really bad yesterday. I've been taking the kids up to my folks. See? And I said, I told them why I can't go back and like that. I said, 'He'd do the same things all over again.' And they (the kids) said, 'Oh, you don't want to come home with us. You don't love us. You don't want to be with us.' You know. Like that. I try to explain to them. It's so hard and you hate to get them upset again. I mean, they have been upset so much already. I don't know what to do."

1. Summary impression of the speech. She felt bad yesterday. She told her children why she couldn't go back and they told her they thought she didn't love them or want to be with them. She wants her children to understand why she is doing what she is doing, and yet to explain upsets them. She doesn't know what to do. She seems damned if she does and damned if she doesn't explain.

2. Sentence-by-sentence analysis to determine self and nonself acts

I felt bad yesterday.	direct reference to self; dimension - bodily awareness (emotions); <u>self sentence</u>
I've been taking the kids up to my folks.	direct reference to self; dimension - bodily awareness (controlled body movement); <u>self sentence</u>
See?	manner of speaking - ignore
And I said, I told them why I can't go back and like that.	direct reference to self; dimension - bodily awareness (controlled body movement); <u>self sentence</u>
I said, "He'd do the same things all over again."	direct reference to self; dimension - bodily awareness (controlled body movement); <u>self sentence</u>
And they said, "Oh, you don't want to come home with us."	attention focused on the children and what they said; <u>nonself sentence</u>
"You don't love us."	continuance of what the children said; <u>nonself sentence</u>
"You don't want to be with us."	continuance of what the children said; <u>nonself sentence</u>
You know. Like that.	manner of speaking - ignore these sentences

I try to explain to them.

direct reference to self;
dimension - bodily awareness
(controlled body movement);
self sentence

It is so hard and you hate to get them upset again.

compound sentence: "It is so hard" is considered first. The "it" refers to trying to explain. In this instance the scorer may fill out the subject more fully by interpreting what the "it" means and score it as being a reference to self even though the direct and indirect rule does not apply.

Note: Scores are asked to transform indirect communications into a form complete enough to permit classification into a self or a nonself act if such a translation is readily apparent using the speech as the basis for the translation. This does not mean that the scorer literally phrases all indirect communication, but rather that the scorer's decision reflects the meaning conveyed by the speaker. The second part of the sentence, "you hate to get them upset again", involves an indirect reference to self.

dimension - bodily awareness
(emotion);
self sentence

I mean, they have been upset so much already.

direct reference to self, but the speaker's attention is focused on her children;
nonself sentence

I don't know what to do.

direct reference to self;
dimension - values (standards of correctness);
self sentence

3. Combining self sentences into self acts

First self act:

"I felt bad yesterday. I've been taking the kids up to my folks. And I said, I told them why I can't go back and like that. I said, 'He'd do the same things all over again.'"

Second self act:

"I try to explain to them. It is so hard and you hate to get them upset again."

Third self act:

"I don't know what to do."

4. Combining sentences into nonself actsFirst nonself act:

"And they said, 'Oh, you don't want to come home with us. You don't love us. You don't want to be with us.'"

Second self act:

"I mean, they have been upset so much already."

5. Final scoring into acts. The sequencing of acts for this speech, then, is as follows: self, nonself, self, nonself, self.

This speech contains three self acts and two nonself acts.

Scoring Self Acts According to the Awareness Categories

Once a speech is unitized (i.e., divided into self, nonself and incomplete acts), the scorer must then score each self act in the speech according to one of three awareness categories: (a) emergent awareness, (b) familiar awareness, and (c) denied awareness. Scoring of self acts into these categories is based upon a decision regarding the speaker's use of the operations of differentiation and integration. In brief, if the speaker gives evidence of developing, replacing, or modifying his experience of himself, then that self act is scored in the emergent awareness category. If, on the other hand, the speaker gives no evidence of developing, replacing, or modifying his experience of himself, then that self act is scored in the familiar awareness category. In contrast, if the speaker indicates that he (or she) thinks and feels nothing, then that self act is scored in the denied awareness category. Note: the entire speech is to be used as the context for scoring self acts according to the awareness categories.

Rules for scoring self acts in the emergent awareness category

1. The speaker must give evidence of increased differentiation and/or integration of meaning viz. the dimensions of bodily awareness, social role and/or values.

- (a) To differentiate meaning is to distinguish or elaborate particular aspects of the meaning of a self-experience.

Examples:

"I feel goofy. I feel obligated, but I feel stupid. I don't know. I just feel stupid."

(Note: If the speaker had simply said: "I feel goofy", this would have been scored in the familiar awareness category because it does not reflect increased differentiation of meaning.)

"I think I was hard . . . hard. Harder than I really had to be. I don't know . . . ah . . . I guess I feel soft and loving at times with my husband and the children . . . I can love . . . them . . . but I am not loving . . . I mean I never show it."

- (b) To integrate meaning is to abstract a common meaning from the differentiated aspects of a self-experience - i.e., the speaker synthesizes the meaning of the differentiated aspects of himself.

Examples:

"I have a sense of things missed and opportunities that have slipped me by. I feel full of regret."

(Note: The final sentence - "I feel full of regret" - represents the speaker's synthesis of his two preceding differentiations.)

"I feel very much alone. Like nobody cares what happens to me. Kind of brings to mind this picture of one of those old people you see who just kind of exist in their one-room apartments. Nobody in the world even caring they exist. I am very scared that for my whole life I will always be alone."

(Note: The entire speech is to be used as the context for scoring self acts according to the awareness categories. In this example, the underlined nonselves are further differentiations of loneliness. The final self act - "I am very scared that for my whole life I will always be alone" - generates a common meaning from the speaker's preceding differentiations. Thus, the two self acts contained in this speech would be scored in the emergent awareness category because the first represents increased differentiation; the second, integration.

2. The speaker must give evidence of developing, modifying or replacing his experience of himself through his increased differentiation and/or integration of meaning.

Rules for scoring self acts in the familiar awareness category

1. If the speaker describes himself in a mechanical manner (noticeably lacking in spontaneity) or as a reporter or observer, simply "telling" his story, clicking off the facts of his self-experience, perhaps even interpreting the experience, but leaves the meaning of the self-experience relatively unchanged, score the self act as familiar awareness. The speaker is accounted for and analyzed but gives no evidence of developing, replacing or modifying his self-experience. He does not demonstrate any emotional response. Both the emotional remoteness and the manner of presentation make the self-description appear rehearsed.

Examples:

"Well, I used to drink lots but I've really slowed down. Like, for instance, yesterday. I hever had nothin'; Sunday I just had one mouthful. Monday, I just had a couple of shots and that's slow for me. Friday, I think I had a couple of shots."

"I was wondering if I should try to forgive them for what they did. You know. Try and think about the good things they have done. I have really strong antagonistic feelings toward them."

2. Same as Rule 1, except the material is discussed either with feeling or spontaneity or both. There is clear indication the speaker is responding emotionally, his communication is laden with feeling; however, the expression is without movement - i.e., the speaker gives no evidence of developing, modifying or replacing his experience of himself. The speaker does not explore the significance of the meaning of the self-experience. He appears to be perseverating in old, "known" self-experiences.

Example:

"Like I said, you can't go back to living like that . . . I've said that even if he wouldn't do those things again, I'd still . . . I mean, I just can't trust him any more."

Scoring self acts in the denied awareness category

If the speaker indicates that he thinks and feels nothing, then that self act is scored in the denied awareness category. (Note: The element of negation is crucial.)

Examples:

"Well, I didn't feel anything. Just my ah feeling was that . . . uhm a fairly nonentity kind of experience."

"I didn't feel one way or another about it. I hadn't really expected anything."

Scoring Self Acts According to the Self-Esteem Categories

Self-esteem may vary dramatically as one or another aspect of self-experience is described. Thus, each self act emitted by the speaker is to be scored as an instance of positive self regard, negative self regard or as "neutral" - i.e., unscorable. If the content of the self act exemplifies any one of the following five definitions of positive self regard, then score the self act as an instance of positive esteem. If the content of the self act exemplifies the opposite definition, then score the self act as an instance of negative esteem. If none of the definitions apply to the content of the self act, score the act as neutral. (Note: The entire speech is to be used as the context for scoring self acts according to the esteem categories.)

The following preamble will clarify the following definitions of positive and negative self regard. When we speak of positive self-esteem we shall simply mean that the individual respects himself, considers himself worthy; he does not necessarily consider himself better than others, but he definitely does not consider himself worse; he does not feel that he is the ultimate in perfection, but, on the contrary, recognizes his limitations and expects to grow and improve. Low self-esteem, on the other hand, implies self-rejection, self-dissatisfaction, self-contempt. The individual lacks respect for the self he observes. The self-picture is disagreeable, and he wishes it were otherwise.

Definitions of positive self-esteem

1. The speaker is satisfied with himself.
2. The speaker thinks he has a number of good qualities.
3. The speaker thinks he is able to do things as well as most other people.
4. The speaker feels he is a person of worth, at least on an equal plane with others.
5. The speaker takes a positive attitude toward himself.

Definitions of negative self-esteem

1. The speaker thinks he is no good at all.
2. The speaker thinks that he does not have much to be proud of.
3. The speaker feels useless.
4. The speaker wishes he could have more respect for himself.
5. All in all, the speaker is inclined to feel he is a failure.

Examples of positive esteem

"I am sort of pleased about being able to let Tom know I was angry without tearing him apart or pushing him away."

"In the beginning I felt I probably wasn't doing much for this group or I wasn't getting much out of it, you know . . . and then I suppose I was a little bit afraid of a few things that were happening within me. But lately, just lately, I feel that I am a full-fledged member of this group. I can give and take without rescuing or being rescued."

"Well, I've just noticed such a difference. I find that when I feel things - even if I feel hate - I don't care. I don't mind. I feel more free now. I don't feel guilty about things."

Examples of negative esteem

"I haven't got what it takes to be normally accepted person."

"I have nothing to say because of a fear of condemnation, of ridicule . . . and what I'm looking for is release from this inability or fright of just being a human being."

"I think I'm seeing rather clearly now that most of the pain I suffer is because I am no one. I am no one, and I am not following a pattern that is really me, but just a lot of patterns that other people . . . alternative me's, do you see . . . and that's not a very good way to be."

APPENDIX

Nonself Acts*

*Derived from the Bale's (1950, 1970) Interaction Process Analysis

Agreement or Disagreement with Another's Statements
Are to be Scored as Nonsell Acts

Agreement

There are two forms of agreement:

1. Preliminary and minor forms, which include:

- (a) Any sign of recognition as another gets ready to speak, or giving specific signs of attention to what the other is saying as he goes along.

Examples: "m-hmm"; "Yes"; "I see".

- (b) Showing comprehension, understanding, insight, after a period of puzzlement.

Examples: "Oh, I see"; or "Yes"; or "Sure, now I get it."

2. Substantial and binding forms. The substantial forms of agreement have a more binding or contractual implication - they are given as if meant to commit the agreeing person to the substantial content of what has been said, and as if they might be relied upon later. An expression of content followed by a substantial agreement is the nucleus of a social norm. The agreement may be about information, opinion or suggestion. It may express belief, confirmation, conviction, accord, concurrence, assent about facts, inferences, hypotheses.

Examples: "That's the way I see it too"; "I think you are right about that"; "Yes, that's true"; "Precisely."

Similarly, this type of agreement includes approval or endorsement of expressions of value, feeling, or sentiment.

Examples: "I feel the same way you do"; "I hope so too"; "Those are my sentiments exactly"; "That's right."

Disagreement

Disagreement is the act of conveying the information to the other that the content of his propositions (his statement of information, opinion, or suggestion) is not acceptable, at least not immediately.

Examples: "No"; "I don't think so"; "I disagree"; "I don't agree"; "I can't accept that"; "Well . . ."; "But . . ."

Mild forms of disagreement are also included, such as showing surprise, temporary disbelief, astonishment, amazement, or incredulity.

Examples: "What!"; "You don't say!"; "That can't be!"

One may also disagree by providing an argument, in the form of information about the situation, which may include an analysis of the facts, opinions, alternative suggestions and the like.

If a member refers directly or indirectly to himself
and gives or asks for information, suggestions or opinions
these are scored as nonself acts

Information

Information is defined as neutral, factual in form (though not necessarily true), based on perception or direct experience of potentially public events or objects (not including information about the self), and hence testable. Any act too vague in principle to be tested is scored as opinion.

1. Probably the clearest cases of giving information are statements about the supposed factual nature of the outer situation facing the group, statements which are recognized as generally established or easily confirmed by observation ("The cabs are outside"; "We only have two days left"). Other types of information giving include repeating what the other has said back to him, reflecting feeling and content (sometimes called nondirective reflection of feeling; or explaining, enlarging, summarizing or restating, not with the purpose of carrying an argument further, but simply for the purpose of making the communication more adequate).

2. Asking for information refers to questions requesting a factual, descriptive, objective type of answer, an answer based upon experience, observation or empirical research. If such a kind of answer is impossible, in that it requires guessing, supposing, looking forward in time to events that have not yet occurred, or the like, then the question would be scored as asking for opinion rather than information. The questions can be about the outer situation or task facing the group itself, its structure or organization, about the other person, about the self, or about what has been said or done in the process of communication currently going on. The question may be direct ("How long have you been in the hospital?") or indirect ("I'm not sure of the exact date").

Opinion

1. Giving an opinion includes all verbalizations of the process of thought leading to an understanding such as reasoning, reckoning, calculating or concentrating. The inferential and evaluative elements distinguish acts of giving an opinion from acts of giving information. Information consists of descriptive factual statements about observable events.

Examples:

- (a) Analysis of cause and effect relations, categorical labeling, or any other sort of logical, intuitive, or conjectural process ("I think it might be . . ."; "Maybe it could be . . ."; "If that's true, then . . .")
- (b) Any verbalization in which a member attempts by inference or reasoning, in a primarily objective way, to understand, diagnose, assess or interpret the motivation or activity of another member, or any feature of the group, its structure, dynamics or past action.

2. Asking for opinion includes any kind of question which attempts to encourage a statement or a reaction on the part of another without limiting the nature of the response except in a very general way, with the implication that the other has freedom to express interest or disinterest, where he is not put under any pressure to agree or disagree, or to come out with any type of predetermined answer or type of attitude.

Examples: "I wonder how you feel about that?"; "I can't figure out what that might mean"; "I wonder why you feel that way?"

Suggestion

1. Direct attempts to guide or counsel, or prepare the other for some activity, to prevail upon him, exhort him, urge, enjoin, or inspire him to some action, by dependency upon authority or ascendance rather than by logical inference are called giving suggestion. Sometimes the implication of ascendance is minimal but they are nonetheless classified as a suggestion (e.g., "Would you hand me the ashtray, please?").

Sometimes substantive suggestions are followed by an announcement of an agreement which indicates that the suggestion has been "enacted into law"; that is, as if it should be final for the group as a whole (e.g., "That's what we should do"; "I guess we are all agreed on that").

2. Asking for suggestion are submissive acts which aim to turn the initiative over to the other. Often such acts will also indicate a feeling of confusion or uncertainty about the position of the group with regard to its goals, the course of the discussion to the present point, or about what has been said or is going on (e.g., "Where are we?"; "Where do we stand now?"; "I don't know what to do").

APPENDIX C

Tables Related to Inter-Scorer Reliability

Table C1

Inter-Scorer Reliability Between Scorers A, B and C for Subject 1*

Session	Total Number of Speeches	% Agreement on Acts			% Agreement on Awareness			% Agreement on Esteem		
		A + B	A + C	B + C	A + B	A + C	B + C	A + B	A + C	B + C
1	19	79	77	75	81	86	85	73	77	81
2	30	89	89	72	82	85	88	74	78	78
3	25	72	80	72	93	90	87	79	79	81
4	21	88	72	72	89	89	91	78	74	76
5	24	92	92	92	99	97	95	73	77	73
6	12	89	87	87	81	83	83	79	81	81
7	10	89	92	84	84	81	88	78	86	80
8	17	89	79	82	91	87	93	77	75	75
9	11	84	84	86	95	98	98	74	76	74
10	16	87	84	92	83	81	86	79	81	79
11	17	77	72	89	87	89	85	73	73	75
12	9	91	81	81	95	98	93	77	79	77
13	16	75	77	79	96	96	90	73	76	76
14	20	72	72	80	88	84	88	80	80	78
15	28	87	87	89	93	91	91	76	78	78
16	19	74	78	80	97	95	91	79	81	81
17	27	81	86	82	81	83	87	78	80	78
18	33	75	78	75	83	85	83	73	75	73

*% agreement rounded off

Table C2
 Inter-Scorer Reliability Between Scorers A, B and C
 on Ten Randomly Selected Speeches from the Careers of Subjects 2 to 16*

Subject	% Agreement on Acts			% Agreement on Awareness			% Agreement on Esteem		
	A + B	A + C	B + C	A + B	A + C	B + C	A + B	A + C	B + C
2	84	86	86	93	95	93	80	82	84
3	91	93	95	98	98	98	88	86	88
4	96	96	96	95	95	95	85	87	87
5	87	85	87	94	96	94	86	88	86
6	93	97	95	96	94	96	87	87	85
7	86	86	84	95	93	93	96	84	80
8	95	90	90	98	98	98	85	87	85
9	93	87	93	94	96	96	84	84	84
10	85	89	87	97	95	95	75	77	75
11	90	93	91	98	98	98	82	86	86
12	89	87	85	94	94	96	84	88	84
13	84	89	84	93	95	93	74	74	78
14	95	97	95	95	95	95	80	80	80
15	90	90	90	98	98	98	88	86	86
16	84	88	90	95	94	95	85	83	85

**% agreement rounded off

APPENDIX D
ARIMA Analyses

Group I1. Data set description

Self acts (Variable 1); 30 pre-VTR observations vs. 30 VTR observations

2. Pre-VTR autocorrelations

Difference Order	Lag				
	1	2	3	4	5
0	.02	-.01	-.11	-.03	.05
1	-.45*	.01	-.11	.00	.18
2	-.63*	.19	-.08	-.04	.22

*significant at approximately .10

3. Pre-VTR partial autocorrelations

Difference Order	PH1				
	1,1	2,2	3,3	4,4	5,5
0	.02	-.01	-.11	-.03	.05
1	-.45	-.24	-.27	.03	.17
2	-.63	-.34	-.16	.06	.14

4. VTR autocorrelations

Difference Order	Lag				
	1	2	3	4	5
0	.31*	-.32*	-.24	.00	.25
1	-.10	-.43*	-.06	.00	.23
2	-.32*	-.34*	.14	-.09	.13

*significant at approximately .10

Group I (continued)5. VTR partial autocorrelations

Difference Order	PH1				
	1,1	2,2	3,3	4,4	5,5
0	.30	-.45	.06	-.07	.25
1	-.10	-.45	-.21	-.19	.22
2	-.31	-.49	-.29	-.18	.13

6. Model selected

0, 1, 1

Group I1. Data set description

Self acts (Variable 1); 30 VTR observations vs. 30 post-VTR observations

2. VTR autocorrelations

Presented on page 131

3. VTR partial autocorrelations

Presented on page 132

4. Post-VTR autocorrelations

Difference Order	Lag				
	1	2	3	4	5
0	-.05	-.43*	.12	.23	-.17
1	-.32*	-.43*	.20	.24	-.14
2	-.46*	-.28	.22	.16	-.12

*significant at approximately .10

5. Post-VTR partial autocorrelations

Difference Order	PH1				
	1,1	2,2	3,3	4,4	5,5
0	-.05	-.44	.07	.04	-.16
1	-.32	-.59	-.42	.09	-.13
2	-.46	-.62	-.77	.18	-.12

6. Model selected

0, 2, 2

Group II1. Data set description

Self acts (Variable 1); 30 pre-VTR observations vs. 30 VTR observations

2. Pre-VTR autocorrelations

Difference Order	Lag				
	1	2	3	4	5
0	-.050	-.214*	.016	.016	.148
1	-.359*	-.249*	.150	-.051	.091
2	-.501*	-.143	.235	-.102	.039

*significant at approximately .10

3. Pre-VTR partial autocorrelations

Difference Order	PH1				
	1,1	2,2	3,3	4,4	5,5
0	-.05	-.21	-.00	-.03	.14
1	-.36	-.43	-.21	-.07	-.09
2	-.50	-.52	-.31	.02	.02

4. VTR autocorrelations

Difference Order	Lag				
	1	2	3	4	5
0	-.05	-.36*	-.11	.07	.20
1	-.32*	-.28	-.00	.06	.13
2	-.49*	-.07	.02	.04	.03

*significant at approximately .10

Group II (continued)5. VTR partial autocorrelations

Difference Order	PH1				
	1,1	2,2	3,3	4,4	5,5
0	-.05	-.36	-.19	-.05	.20
1	-.32	-.42	-.41	-.00	.14
2	-.49	-.42	-.41	.11	.01

6. Model selected

0, 1, 2

B30206